



Lionville Laboratory, Inc.  
GRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

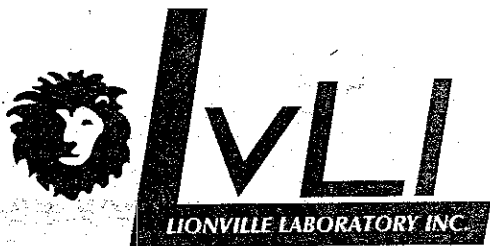
LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03LVJC18	12/07/03	N/A	12/18/03
B17RT8	004 MS	S	03LVJC18	12/07/03	N/A	12/18/03
B17RT8	004 MSD	S	03LVJC18	12/07/03	N/A	12/18/03

LAB QC:

TBLKNS	MB1	S	03LVJC18	N/A	N/A	12/18/03
TBLKNS	MB1 BS	S	03LVJC18	N/A	N/A	12/18/03

*Beckman*



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003

### GRO

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were analyzed according to Lionville Laboratory OPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 12-18-2003. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The sample was analyzed within required holding time.
3. The method blank was below the reporting limits for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

  
Date

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



## GLOSSARY OF GASOLINE RANGE ORGANICS DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.



## Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 01/15/04 16:56

RFP Batch Number: 0312L369

Client: TNUHANFORD #03-025 H2461 Work Order: 11343606001 Page: 1

	Cust ID:	B17RT8	B17RT8	B17RT8	TBLKNS	TBLKNS BS
Sample	RFP#:	004	004 MS	004 MSD	03LVJC18-MB1	03LVJC18-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Fluorobenzene	93 %	85 %	80 %	106 %	110 %
	=====fl=====					
Gasoline Range Organics (GRO)		30 U	99 %	96 %	30 U	107 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*Fr. 1/15/04*



FLUOR Hanford Inc.			CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-025-001		Page 1 of 1			
Collector <u>POPE / PFISTER / HUGHES</u>			Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>		
Project Designation 200-LW-1/LW-2 Characterization - Soil			Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>						
Ice Chest No. <u>ERC 02 501</u>			Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS						
Shipped To <u>MO 10-24-03</u> <u>EBERLINE SERVICES (Formerly TMA)</u> <u>Receiv</u>			Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE OSPC</u>								
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C						
				Type of Container		aG	aG						
				No. of Container(s)		1	1						
				Volume		60mL	60mL						
SAMPLE ANALYSIS				Pesticides - 8081		Chloro- Herbicides - EPA8151							
Sample No.	Matrix *	Sample Date	Sample Time										
B17RY5	SOIL	12-5-3	15:00	✓	—					TLE TO	B17RY6		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03				Matrix *  S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipo L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<u>Kevin DOUGHERTY</u>		<u>12-5-3 16:00</u>		<u>MO-026 Fridge #1</u>		<u>12-5-3 16:00</u>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<u>MO-026 Fridge #1</u>		<u>12/8/03 1230</u>		<u>Greg Thomas / Greg Thomas</u>		<u>12/8/03</u>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<u>Greg Thomas / Greg Thomas</u>		<u>12/8/03 1245</u>		<u>David St John / Eric</u>		<u>12/8/03 1245</u>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<u>SDGAC (EA) / B</u>		<u>12-12-03</u>		<u>FED EX</u>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<u>FedEx</u>		<u>12/15/03 0950</u>		<u>JPerry</u>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1	
Collector: <u>POPE/PROCTOR/HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>TR10-29-03 Recra</u> EBERLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SEE OSLC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RT3	SOIL	12-6-3	15:45	-					TLE TO B17RT5
B17RT6	SOIL	12-6-3	15:45	-					TLE TO B17RT5
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1  (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-90, Total Sr</p> <p>Personnel not available to Relinquish samples from 3728  Ref # <u>11</u> on <u>12/12/03</u></p>	
Kevin H. 12/6/03		1800		MO 026 Fridge #2 12/6/03		1800			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
MO 026 Fridge #2 12/8/03		1230		Greg Thomas 12/8/03		1230			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Greg Thomas 12/8/03		1245		David St. John 12/8/03		1245			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
S. GALE 12/12/03		1000		FGD EX					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
FedEx 12/15/03		0950		J. Perry					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-004		Page 1 of 1			
Collector <b>Bob Phister/Hughes</b>	Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>		
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC 02501</b>		Field Logbook No. <b>HNF-N-356-1</b>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <b>TRC 10-28-03</b> <del>BERLINE SERVICES (Formerly TMA)</del> <b>Recra</b>		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE 08PC</b>							
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None
				Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P
				No. of Container(s)	3	1	3	1	1	1	1
				Volume	40mL	120mL	40mL	120mL	250mL	500mL	500mL
SAMPLE ANALYSIS				VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time								
B17RT8	SOIL	12-7-3	10:30	✓	—	—	—	—	—	—	
				Personnel not available to relinquish samples from 3728							
				Ref # <b>1A</b> on <b>12/12/03</b>							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Semi-VOA - 8270A (TCL) (Phenol); Semi-VOA -- 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G</p> <p>(2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Antimony, Beryllium, Bismuth, Copper, Nickel); Mercury - 7471 - (CV)</p> <p>(3) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Ammonia - 350.3; Total Cyanide - 9010; pH (Soil) - 9045</p> <p><del>(4) Copper - 6000.0; Cobalt - 6000.0; Chromium - 6000.0; Lead - 6000.0; Manganese - 6000.0; Nickel - 6000.0; Silver - 6000.0; Vanadium - 6000.0; Zinc - 6000.0</del></p> <p><del>(5) Spect - Add-on (Ammonium) - 125; Boron - 6000.0; Fluoride - 6000.0; Nitrate - 6000.0; Nitrite - 6000.0; Phosphate - 6000.0; Sulfate - 6000.0; Total Chromium - 6000.0; Total Copper - 6000.0; Total Lead - 6000.0; Total Nickel - 6000.0; Total Silver - 6000.0; Total Vanadium - 6000.0; Total Zinc - 6000.0</del></p> <p><b>RP 12/2/3</b></p>			
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Site Trailer RMA Fridge 12-7-3</b>		<b>12-7-3</b>		<b>Site Trailer RMA Fridge 12-7-3</b>		<b>12-7-3</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Site Trailer RMA Fridge 12-9-03</b>		<b>12-9-03</b>		<b>Site Trailer RMA Fridge 12-9-03</b>		<b>12-9-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 2 12-9-03</b>		<b>12-9-03</b>		<b>Ref # 2 12-9-03</b>		<b>12-9-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<b>Ref # 2 12-9-03</b>		<b>12-9-03</b>		<b>Ref # 2 12-9-03</b>		<b>12-9-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
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<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>					
<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>		<b>Ref # 1A 3728 12-11-03</b>		<b>12-11-03</b>					
<b>Relinquished By/Removed From</b>											

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1	
Collector <u>DOE/Prober/Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MS 1029-02 Reera</u> BERLINE SERVICES (Formerly TWA)		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE OFPC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
				<u>12/2/03</u>					
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV5	SOIL	12-7-03	14:10	X				TIE TO B17RV7	
CHAIN OF POSSESSION				Sign/Print Names		<b>SPECIAL INSTRUCTIONS</b> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Sr  <u>RP 12/2/03</u>  Personnel not available to Relinquish samples from 3728 Ref # <u>1A</u> on <u>12/12/03</u>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
<u>Kevin Hughes</u>	<u>12-7-03 16:40</u>	<u>MO 026 Fridge #1</u>	<u>12-7-03/16:40</u>						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
<u>MO 026 Ref #1</u>	<u>12/8/03 1230</u>	<u>Greg Thomas</u>	<u>12/8/03 1230</u>						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
<u>Greg Thomas</u>	<u>12/8/03 1245</u>	<u>Paula St John</u>	<u>12/8/03 1245</u>						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	<b>Matrix *</b> S=Soil SG=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
<u>SIGALAD-12-12-03</u>	<u>0920</u>	<u>FED EX</u>							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
<u>Red EX</u>	<u>12/15/03 0950</u>	<u>Jerry</u>							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

ELUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1													
Collector <i>Dave P. P. / P. P. / P. P.</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (97.5 -100 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <i>ERC 02 501</i>		Field Logbook No. <i>NF 3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <i>MDS 10-29-03 Pera</i> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040 059</i>		Bill of Lading/Air Bill No. <i>SEA 03PC</i>																	
POSSIBLE SAMPLE HAZARDS/REMARKS																					
Special Handling and/or Storage				Preservation	Cool 4C	None															
				Type of Container	G	G/P															
				No. of Container(s)	1	1															
				Volume	250mL	250mL															
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.																
Sample No.	Matrix *	Sample Date	Sample Time																		
B17RW4	SOIL	12-10-03	1245	X																	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63 Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 - Total Sr</p> <p>RP 12/2/3</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 58 on 12/12/03</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>									
<i>Thomson</i>		<i>12-16-03 1515</i>		<i>Fridge #1 M0-026</i>		<i>12-16-03 1515</i>															
<i>Fridge #1 M0-026</i>		<i>12-11-03 1000</i>		<i>Thomson</i>		<i>12-11-03 1000</i>															
<i>Thomson</i>		<i>12-11-03 1010</i>		<i>Ref # 33 3728</i>		<i>12-11-03 1010</i>															
<i>Ref 33 3728</i>		<i>12-12-03 1100</i>		<i>W. J. A. H.</i>		<i>12-12-03 1100</i>															
<i>W. J. A. H.</i>		<i>12-12-03 1100</i>		<i>FED EX</i>																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Fed Ex</i>		<i>12/15/03 0950</i>		<i>RP</i>																	
LABORATORY SECTION		Received By		Title		Date/Time															
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time															

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1	
Collector <u>Doyle / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02501</u>		Field Logbook No. <u>HNF-D-356-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MDIO-24-03 Recra</u> <u>EDERLINE SERVICES (Formerly TMA)</u>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>See 03PC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-03	10:30	X					
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				
Sign/Print Names					The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *	
<u>Reinhardt / RMA Fringe</u>		16:00		<u>Site trailer RMA Fringe</u>		16:00		S=Soil	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SE=Scalant	
<u>She Trailer RMA Fringe</u>		1230		<u>Tru Hansen / RMA Fringe</u>		1230		SO=Solid	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SF=Sludge	
<u>Tru Hansen / RMA Fringe</u>		14:00		<u>Ref #2</u>		14:00		W=Water	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		O=Oil	
<u>Ref #2</u>		10:00		<u>Tru Hansen / RMA Fringe</u>		10:00		A=Air	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		DS=Drum Solids	
<u>Ref #2</u>		10:00		<u>Ref #1A</u>		10:00		DL=Drum Liquids	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		T=Tissue	
<u>Ref #2</u>		10:00		<u>Ref #1A</u>		10:00		WI=Wipe	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		L=Liquid	
<u>Ref #2</u>		11:00		<u>Ref #1A</u>		11:00		V=Vegetation	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		X=Other	
<u>Ref #2</u>		11:00		<u>Ref #1A</u>		11:00			
LABORATORY SECTION		Received By		Title		Date/Time			
		<u>Ref. by: Fed Ex</u>		<u>12/15/03 0950 Rec. by: J Perry</u>					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			



**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU- HANFORD*

**Date:** *12-15-03*

**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** *F03-025*

**LvLI Batch #:** *0312L369*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed Ex</i>   | Airbill# <i>7923 8938 8227</i>                       |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals    Comments        |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received cooled or ambient?  | Temp <i>1.5</i> °C  | Cooler # <i>ERC-02-501</i>                           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |



Lionville Laboratory, Inc.  
8015 ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03GCX011	12/07/03	12/19/03	12/19/03
B17RT8	004 MS	S	03GCX011	12/07/03	12/19/03	12/19/03
B17RT8	004 MSD	S	03GCX011	12/07/03	12/19/03	12/19/03

LAB QC:

BLK	MB1	S	03GCX011	N/A	12/19/03	12/19/03
BLK	MB1 BS	S	03GCX011	N/A	12/19/03	12/19/03

*Handwritten signature and date 1/15/04*



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003

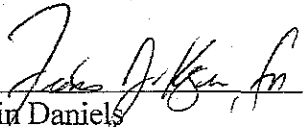
### GC VOA


One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were prepared and analyzed on 12-19-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures. The preparation procedure was based on method 3580A (waste dilution – 1 g into 5 mL water) and the extracts were analyzed based on method 8015 for client specified target compound Ethylene Glycol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The sample was analyzed within required holding time.
3. The method blank was below the reporting limit for the target compound.
4. Surrogates are not currently employed in the methodology.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations were within acceptance criteria.
8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

son\tr\group\data\gcsc\tnu\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



## GLOSSARY OF GC SCAN DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF GC SCAN DATA

- P** = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC SCAN.

## Nonhalogenated Volatiles by GC, Method 8015

Report Date: 01/15/04 19:10

RFW Batch Number: 0312L369

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

5

Yes, indeed.

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Cooler Temp. \_\_\_\_\_ °C

Discrepancies Between  
Samples Labels and  
COC Record? Y or N  
NOTES:

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1								
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC 02501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <b>MO 10-24-03 Recra</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPC</b>												
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C										
				Type of Container	aG	aG										
				No. of Container(s)	1	1										
				Volume	60mL	60mL										
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RY5	SOIL	12-5-3	15:00	✓	✓											
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>				S=Soil SE=Sediment SO=Solid SI=Sledge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
<b>Kevin DOUGHERTY</b>		12-5-3 16:00		<b>MO-026 Fridge #1</b>		12-5-3 16:00										
<b>MO-026 Fridge #1</b>		12/8/03 1230		<b>Greg Thomas</b>		12/8/03 1230										
<b>Greg Thomas</b>		12/8/03 1245		<b>David S. Johnson</b>		12/8/03 1245										
<b>SDGAC (EAP) #6</b>		12-12-03		<b>FED EX</b>												
<b>FedEx</b>		12/15/03 0950		<b>SPERRY</b>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								



<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-003</b>		Page 1 of 1												
Collector: <u>FOPE / P. P. / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <u>MD 10-29-03 Recra</u> • EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SEE OSL</u>																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None													
				Type of Container		G	G/P													
				No. of Container(s)		1	1													
				Volume		250mL	250mL													
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.														
Sample No.		Matrix *		Sample Date		Sample Time														
B17RT3		SOIL		12-6-3		15:45		-										TLE TO B17RT5		
B17RT6		SOIL		12-6-3		15:45		-										TLE TO B17RT5		
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>								<b>Matrix *</b>				
Relinquished By/Removed From <u>Kevin N. 12/6/03</u>				Received By/Stored In <u>MO 026 Fridge #2 12/6/03 1800</u>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec, Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium-42, Carbon-14, Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # <u>11</u> on <u>12/12/03</u>  <u>RP 12/2/3</u>								S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From <u>MO 026 Fridge #2 12/8/03</u>				Received By/Stored In <u>Greg Thomas 12/8/03</u>																
Relinquished By/Removed From <u>Greg Thomas 12/8/03</u>				Received By/Stored In <u>David S. 12/8/03 1245</u>																
Relinquished By/Removed From <u>SJGALE M. 12/12/03 1000</u>				Received By/Stored In <u>FGD EX</u>																
Relinquished By/Removed From <u>FedEx 12/15/03 0950</u>				Received By/Stored In <u>JPC 12/15/03</u>																
Relinquished By/Removed From				Received By/Stored In																
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time														
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time														

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-025-004		Page 1 of 1			
Collector <u>Bob Pfister/Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>			
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>							
Ice Chest No. <u>RRC 02501</u>		Field Logbook No. <u>HMF-N-356-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS							
Shipped To <u>TRD 10-28-03</u> <u>EDERLINE SERVICES (Formerly TMA) Beera</u>		Offsite Property No. <u>A040 059</u>				Bill of Lading/Air Bill No. <u>SEE 08PC</u>							
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None				
		Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P				
		No. of Container(s)	3	1	3	1	1	1	1				
		Volume	40mL	120mL	40mL	120mL	250mL	500mL	500mL				
SAMPLE ANALYSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time										
B17RT8	SOIL	12-7-03	10:30							T16TD B17RV1			
				Personnel not available to relinquish samples from 3728									
				Ref # <u>1A</u> on <u>12/12/03</u>									
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Semi-VOA - 8270A (TCL) (Phenol); Semi-VOA -- 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G</p> <p>(2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Antimony, Beryllium, Bismuth, Copper, Nickel); Mercury - 7471 - (CV)</p> <p>(3) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Ammonia - 350.3; Total Cyanide - 9010; pH (Soil) - 9045</p> <p>(4) <del>Cadmium - 6009.0; Cobalt - 6009.0; Copper - 6009.0; Chromium - 6009.0; Lead - 6009.0; Manganese - 6009.0; Nickel - 6009.0; Silver - 6009.0; Selenium - 6009.0; Vanadium - 6009.0; Zinc - 6009.0</del></p> <p><u>RP 12/2/3</u></p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
Date/Time		Date/Time											
Date/Time		Date/Time											
Date/Time		Date/Time											
Date/Time		Date/Time											
LABORATORY SECTION		Received By				Disposed By				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method								Date/Time			

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-005</b>		Page 1 of 1												
Collector <b>DOPE / PHISOR / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>												
Ice Chest No. <b>ERC 02501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <b>MOBILE SERVICES (Formerly TMA) Reera</b>		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OFC</b>																
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <b>Special Handling and/or Storage</b>				Preservation		Cool 4C	None													
				Type of Container		G	G/P													
				No. of Container(s)		1	1													
				Volume		250mL	250mL													
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.		See item (2) in Special Instructions.														
Sample No.		Matrix *		Sample Date		Sample Time														
B17RV5		SOIL		12-7-3		14:10		X												
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>					<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  <b>RP 12/2/3</b>												
Kevin Hughes 12-7-3		16:40		MO 026 Fridge #1		12-7-3/16:40														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
MO 026 Ref #1		12/8/03		Greg Thomas Greg Thomas		12/8/03														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
Greg Thomas Greg Thomas		12/8/03		MO 026 Ref #1		12/8/03														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03												
SIGHLEAD-12-12-03		0930		FED EX																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
PREDTEX		12/15/03 0950		JPerry																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time												
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time												

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1												
Collector	Dade Photos/Hanford		Company Contact	Telephone No.	Project Coordinator	Price Code 8N		Data Turnaround												
		TRENT, STEVE		373-5689	TRENT, SJ			45 Days												
Project Designation		Sampling Location		SAF No.		Air Quality														
200-LW-1/LW-2 Characterization - Soil		216-B-58 (97.5 -100 ft)		F03-025																
Ice Chest No.		Field Logbook No.		COA		Method of Shipment														
ERC 02 501		NMF 3561		119143ES10		FEDERAL EXPRESS														
Shipped To		Offsite Property No.		Bill of Lading/Air Bill No.																
EBERLINE SERVICES (Formerly TMA) Pera		A040 059		SOS 03PC																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage					Preservation	Cool 4C	None													
					Type of Container	G	G/P													
					No. of Container(s)	1	1													
					Volume	250mL	250mL													
SAMPLE ANALYSIS					See item (1) in Special Instructions.	See item (2) in Special Instructions.														
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RW4	SOIL	12-10-03	1245	X													TIE TO B17RW6			
CHAIN OF POSSESSION				Sign/Print Names				<b>SPECIAL INSTRUCTIONS</b> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63 Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-90,90 - Total Sr  RP 12/2/3  Personnel not available to Relinquish samples from 3728 Ref # 38 on 12/12/03					<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-10-03 1515	Handwritten: [Signature]	12-10-03 1515																	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-11-03 1000	Handwritten: [Signature]	12-11-03 1000																	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-11-03 1010	Handwritten: [Signature]	12-11-03 1010																	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-12-03 1100	Handwritten: [Signature]	12-12-03 1100																	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-12-03 1100	Handwritten: [Signature]	12-12-03 1100																	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time																	
Handwritten: [Signature]	12-15-03 0950	Handwritten: [Signature]	12-15-03 0950																	
LABORATORY SECTION	Received By	Title		Date/Time																
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time																

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-044</b>		Page 1 of 1	
Collector <b>Dope / Pisto / Hughes</b>		Company Contact <b>TRENT, STEVE</b>		Telephone No. <b>373-5689</b>		Project Coordinator <b>TRENT, SJ</b>		Price Code <b>8N</b>	
Project Designation <b>200-LW-1/LW-2 Characterization - Soil</b>		Sampling Location <b>216-B-58 (22.5 - 25 ft)</b>		SAF No. <b>F03-025</b>		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No. <b>HNF-D-356-1</b>		COA <b>119143ES10</b>		Method of Shipment <b>FEDERAL EXPRESS</b>			
Shipped To <b>MSD-12-03</b> <b>EBERLINE SERVICES (Formerly RMA) Recra</b>		Offsite Property No. <b>A040059</b>		Bill of Lading/Air Bill No. <b>500 037C</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					TRF TO B17RV1
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Br  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION				Received By				Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By	

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU- HANFORD*

Date: *12-15-03*

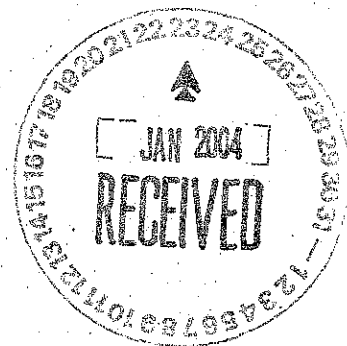
Purchase Order / Project# /  
~~SAFE#~~ / SOW# / Release #: *F03-025*

LvLI Batch #: *0312L369*

Sample Custodian: *V-Hendy*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed E</i>  | Airbill# <i>7923 8938 8227</i>                       |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals      Comments      |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received cooled or ambient?  | Temp <i>1.5</i> °C  | Cooler # <i>ERC-02-501</i>                           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |



Lionville Laboratory, Inc.  
GCSC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03GCX011	12/07/03	12/19/03	12/21/03
B17RT8	004 MS	S	03GCX011	12/07/03	12/19/03	12/21/03
B17RT8	004 MSD	S	03GCX011	12/07/03	12/19/03	12/21/03

LAB QC:

BLK	MB1	S	03GCX011	N/A	12/19/03	12/21/03
BLK	MB1 BS	S	03GCX011	N/A	12/19/03	12/21/03

*Handwritten signature/initials*



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003

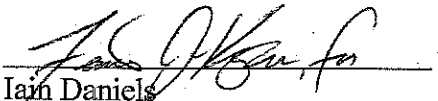
### GC SCAN

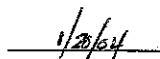
One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-19-2003 and analyzed on 12-21-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures. The extraction procedure was based on method 3580A (waste dilution – 1 g into 5 mL water) and the extracts were analyzed based on method 8015 for client specified target compound n-Butanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was analyzed within required holding time.
3. The method blank was below the reporting limit for the target compound.
4. Surrogates are not currently employed in the methodology.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations were within acceptance criteria.
8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

son\rv\group\data\gcsc\tnu\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.





## GLOSSARY OF GC SCAN DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF GC SCAN DATA

- P** = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC SCAN.

## GC SCAN

Report Date: 01/16/04 10:30

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

n-Butanol	26	U	111	%	105	%	25	U	104	%
-----------	----	---	-----	---	-----	---	----	---	-----	---

78-116/00

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

0312L369

## Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU Hanford F03-025</u>				Refrigerator #		<div style="display: flex; justify-content: space-between;"> <span>ABC</span> <span>D</span> <span>E</span> <span>F</span> <span>G</span> <span>H/IJ</span> <span>K</span> <span>L</span> <span>M</span> </div>																	
Est. Final Proj. Sampling Date				#/Type Container	Liquid																		
Project # <u>11343-606-001-9999-00</u>					Solid																		
Project Contact/Phone #				Volume	Liquid																		
Lionville Laboratory Project Manager <u>O. Johnson</u>					Solid																		
QC <u>Spec</u> Del <u>5D</u> TAT <u>30 days</u>				Preservatives																			
Date Rec'd <u>12/15/03</u> Date Due <u>1-14-03</u>				ANALYSES REQUESTED →		<div style="display: flex; justify-content: space-between;"> <div>ORGANIC</div> <div>INORG</div> </div>																	
						VOA	BNA	Pest/POB	Herb	POBS	STOUT	TPH	ALIPHATICS	PAHs	Metal	CN	Ambient	Ambient	Cr6	Nickel	Sulfides	Oil/Grease	
						Lionville Laboratory Use Only																	
						06290		06084	0606X	0608	0625X	0620	0608	0605	0605C	ACTO	ICHTO	ICHTN	ICHTN	ICHTN	ICHTN	ICHTN	
						MS	MSD																
<b>MATRIX CODES:</b> S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids EP/CLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix	Date Collected	Time Collected																		
	001	BITRY5	S	12/5/03	1500																		
	002	BITRT3		12/6/03	1545																		
	003	BITRT6		↓	1545																		
	004	BITRT8		12/7/03	1030	3																	
	005	BITRV5		↓	1410																		
	006	BITRW4		12/10/03	1245																		
	007	BITRV2		12/7/03	1030																		

Special Instructions: SAF # F03-025Run Matrix QCMet ①: ACRA + Sb, Be, Bi, Cu, NiIC ①: Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

DATE/REVISIONS:

12-19-03 1. Add 08015 to -004

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

Lionville Laboratory Use Only

Samples were:

1) Shipped \_\_\_\_\_ or

Hand Delivered \_\_\_\_\_

Airbill # \_\_\_\_\_

2) Ambient or Chilled

3) Received in Good

Condition Y or N

4) Samples

Properly Preserved

Y or N

5) Received Within

Holding Times

Y or N

Tamper Resistant Seal was:

1) Present on Outer

Package Y or N

2) Unbroken on Outer

Package Y or N

3) Present on Sample

Y or N

4) Unbroken on

Sample Y or N

COC Record Present

Upon Sample Rec'd

Y or N

Cooler

Temp. \_\_\_\_\_ °C

Relinquished by	Received by	Date	Time
FedEx	JPerry	12/5/03	0950

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Discrepancies Between  
Samples Labels and  
COC Record? Y or N

NOTES:

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1			
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>			
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>			
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <b>MYD 10-24-03</b> EBERLINE SERVICES (Formerly TMA) <b>Rocra</b>		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPC</b>							
POSSIBLE SAMPLE HAZARDS/REMARKS   Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C					
				Type of Container	aG	aG					
				No. of Container(s)	1	1					
				Volume	60mL	60mL					
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151						
Sample No.	Matrix *	Sample Date	Sample Time								
B17RY5	SOIL	12-5-3	15:00	✓	—			TIE TO	B17RY6		
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS  Personnel not available to Relinquish samples from 3728 Ref #1A on 12/12/03					
Relinquished By/Removed From		Date/Time		Received By/Stored In						Date/Time	
<i>Kevin D. GUEZ</i>		16:00		MO-026 Fridge #1						12-5-3 16:00	
Relinquished By/Removed From		Date/Time		Received By/Stored In						Date/Time	
MO-026 Fridge #1		12/8/03 1230		Greg Thomas / Greg Thomas						12/8/03	
Relinquished By/Removed From		Date/Time		Received By/Stored In						Date/Time	
Greg Thomas / Greg Thomas		12/8/03 1245		David S. Johnson		12/8/03 1245					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
SDGALAN / SDGALAN		12-12-03		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FED EX		12/15/03 0950		JPCruz							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION	Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time						

Matrix \*

S=Soil  
SE=Sediment  
SO=Solid  
SL=Sludge  
W=Water  
O=Oil  
A=Air  
DS=Drum Solids  
DL=Drum Liquids  
T=Tissue  
WI=Wipe  
L=Liquid  
V=Vegetation  
X=Other

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1													
Collector <u>POPE / PHILLIPS / HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <u>TRM 10-29-03 Recra</u> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SGE 087C</u>																	
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None														
				Type of Container		G	G/P														
				No. of Container(s)		1	1														
				Volume		250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.															
Sample No.		Matrix *		Sample Date		Sample Time															
B17RT3		SOIL		12-6-3		15:45		-								TLE TO		B17RT5			
B17RT6		SOIL		12-6-3		15:45		-								TLE TO		B17RT5			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS								Matrix *					
Relinquished By/Removed From <u>Kevin N. 12/6/03</u> Date/Time <u>1800</u>				Received By/Stored In <u>MO 026 Fridge #2</u> Date/Time <u>126-3 1800</u>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # <u>1A</u> on <u>12/12/03</u>  <u>RP 12/2/3</u>								S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue L=Liquid V=Vegetation X=Other					
Relinquished By/Removed From <u>MO 026 Fridge #2</u> Date/Time <u>1230</u>				Received By/Stored In <u>Greg Thomas Hughes</u> Date/Time <u>1230</u>																	
Relinquished By/Removed From <u>Greg Thomas Hughes</u> Date/Time <u>1245</u>				Received By/Stored In <u>David St. John</u> Date/Time <u>12/08/03 1245</u>																	
Relinquished By/Removed From <u>SGALE M. 12/12/03 1000</u>				Received By/Stored In <u>FGD EX</u>																	
Relinquished By/Removed From <u>FedEx</u> Date/Time <u>12/15/03 0950</u>				Received By/Stored In <u>JFC</u> Date/Time																	
Relinquished By/Removed From				Received By/Stored In																	
LABORATORY SECTION		Received By		Title												Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By										Date/Time					

A-6003-618(03/03)

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-005</b>		Page 1 of 1											
Collector <i>DOPE / HHSK / Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>											
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>													
Ice Chest No. <i>ERC 02501</i>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS													
Shipped To <i>INS 1029-02 Reera</i> <small>BERLINE SERVICES (Formerly TMA)</small>		Offsite Property No. <i>A040 059</i>		Bill of Lading/Air Bill No. <i>SEE O57C</i>															
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <b>Special Handling and/or Storage</b>				Preservation		Cool 4C	None												
				Type of Container		G	G/P												
				No. of Container(s)		1	1												
				Volume		250mL	250mL												
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.		See item (2) in Special Instructions.													
Sample No.		Matrix *		Sample Date		Sample Time													
B17RV5		SOIL		12-7-3		14:10		X											
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>					<b>Matrix *</b> S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From <i>Kevin Hughes</i>				Received By/Stored In <i>MOOSE FRIDGE #1</i>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  <i>RP 12/2/3</i>  Personnel not available to Relinquish samples from 3728 Ref # <i>1A</i> on <i>12/12/03</i>											
Date/Time <i>16:40</i>				Date/Time <i>12-7-3/16:40</i>															
Relinquished By/Removed From <i>MOOSE Ref #1</i>				Received By/Stored In <i>Greg Thomas</i>															
Date/Time <i>1230</i>				Date/Time <i>1230</i>															
Relinquished By/Removed From <i>Greg Thomas</i>				Received By/Stored In <i>Greg Thomas</i>															
Date/Time <i>1245</i>				Date/Time <i>12/03/03 1245</i>															
Relinquished By/Removed From <i>SIGALAD-12-12-03</i>				Received By/Stored In <i>FED EX</i>															
Date/Time <i>0930</i>				Date/Time															
Relinquished By/Removed From <i>FED EX</i>				Received By/Stored In <i>JPerry</i>															
Date/Time <i>12/15/03 0950</i>				Date/Time															
Relinquished By/Removed From				Received By/Stored In															
Date/Time				Date/Time															
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time											
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time											



ELUOR Hanford Inc.		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				F03-025-008		Page 1 of 1								
Collector <i>Dope Photos / Arnes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (97.5 -100 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>								
Ice Chest No. <i>ERC 02 501</i>		Field Logbook No. <i>NNF 3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <i>MDS 10-29-03 Pera</i> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040 059</i>		Bill of Lading/Air Bill No. <i>SEE 03PC</i>												
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None										
				Type of Container	G	G/P										
				No. of Container(s)	1	1										
				Volume	250mL	250mL										
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions. <i>RP 12-23</i>											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RW4	SOIL	12-10-03	1245	X										TIE TO B17RW6		
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma-Spec; Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-90,90 - Total Sr  <i>RP 12/2/3</i>  Personnel not available to Relinquish samples from 3728 Ref # <i>38</i> on <i>12/12/03</i>				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other				
<i>Markinson</i>		12-10-03 1515		<i>Fridge #1</i>		12-10-03 1515										
<i>Fridge #1</i>		12-11-03 1000		<i>Markinson</i>		12-11-03 1000										
<i>Markinson</i>		12-11-03 1010		<i>REF #38</i>		12-11-03 1010										
<i>REF 38</i>		12-12-03 1100		<i>WJALE</i>		12-12-03 1100										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<i>SJCM</i>		12-12-03 1100		<i>FED EX</i>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<i>Fed Ex</i>		12-15-03 0950		<i>JPury</i>												
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time										
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time										

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-044</b>		Page 1 of 1	
Collector <u>Dope / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <u>ERC 02 501</u>		Field Logbook No. <u>HNF-D-366-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MDIO-12-03</u> <u>EDERLINE SERVICES (Formerly HMA) Recra</u>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>588 037C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage			Preservation	Cool 4C	None				
			Type of Container	G	G/P				
			No. of Container(s)	1	1				
			Volume	250mL	250mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<u>REF TO B17RV1</u>
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232), Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  <u>RP 12/2/3</u>  Personnel not available to Relinquish samples from 3728 Ref # <u>1A</u> on <u>12/12/03</u>	
<u>Relinquished By/Removed From</u>		<u>12-7-3</u>		<u>Site trailer RMA Frigate</u>		<u>12-7-3</u>			
<u>Relinquished By/Removed From</u>		<u>12-9-03</u>		<u>M. V. Hansen / M. V. Hansen</u>		<u>12-9-03</u>			
<u>Relinquished By/Removed From</u>		<u>12-9-03</u>		<u>Ref # 2</u>		<u>12-9-03</u>			
<u>Relinquished By/Removed From</u>		<u>12-11-03</u>		<u>M. V. Hansen / M. V. Hansen</u>		<u>12-11-03</u>			
<u>Relinquished By/Removed From</u>		<u>12-11-03</u>		<u>Ref # 1A 3728</u>		<u>12-11-03</u>			
<u>Relinquished By/Removed From</u>		<u>12-12-03</u>		<u>Ref # 1A 3728</u>		<u>12-12-03</u>		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<u>Relinquished By/Removed From</u>		<u>12-12-03</u>		<u>Ref # 1A 3728</u>		<u>12-12-03</u>			
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time			
		<u>Rel. by: FedEx</u>		<u>0950</u>		<u>Rec. by: J. Perry</u>			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU- HANFORD*

**Date:** *12-15-03*

**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** *F03-025*

**LvLI Batch #:** *0312L369*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed Ex</i>   | Airbill# <i>7923 8938 8227</i>                       |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals    Comments        |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received cooled or ambient?  | Temp <i>1.5 °C</i>  | Cooler # <i>ERC-02-501</i>                           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |

▲  
[ JAN 2004 ]  
RECEIVED

Lionville Laboratory, Inc.  
DRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03LE1627	12/07/03	12/16/03	12/18/03
B17RT8	004 MS	S	03LE1627	12/07/03	12/16/03	12/18/03
B17RT8	004 MSD	S	03LE1627	12/07/03	12/16/03	12/18/03

LAB QC:

BLK	MB1	S	03LE1627	N/A	12/16/03	12/18/03
BLK	MB1 BS	S	03LE1627	N/A	12/16/03	12/18/03

*Pr 1/15/04*



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003

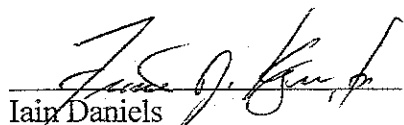
### DIESEL RANGE ORGANICS

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-18-2003. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for the target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

son\group\data\dro\tnu hanford\0305-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.



## GLOSSARY OF DIESEL RANGE ORGANICS DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF DIESEL RANGE ORGANICS DATA

- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 01/15/04 17:52

RFW Batch Number: 03121369

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

	Cust ID:	B17RT8	B17RT8	B17RT8	BLK	BLK BS
Sample Information	RFW#:	004	004 MS	004 MSD	03LE1627-MB1	03LE1627-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	p-Terphenyl	80 %	79 %	75 %	103 %	73 %
	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====
Diesel Range Organics		12.5 U	73 %	79 %	12.0 U	82 %
Kerosene		12.5 U	12.5 U	12.5 U	12.0 U	12.0 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*78-1151-1*



0312L369

## Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU Hanford F03-025</u>				Refrigerator #		<div style="display: flex; justify-content: space-around;"> <span>ABC</span><span>D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>																
Est. Final Proj. Sampling Date _____				#/Type Container	Liquid																	
Project # <u>11343-606-001-9999-00</u>					Solid	<u>3ANL</u> <u>AGL</u> <u>AGL</u> <u>AGL</u> <u>AGL</u> <u>3ANL</u> <u>AGL</u> <u>AGL</u> <u>AGL</u> <u>AGL</u>																
Project Contact/Phone # _____				Volume	Liquid																	
Lionville Laboratory Project Manager <u>O. Johnson</u>					Solid	<u>40</u> <u>60</u> <u>60</u> <u>120</u> <u>120</u> <u>40</u> <u>250</u> <u>500</u> <u>250</u>																
QC <u>Spec</u> Del <u>STD</u> TAT <u>30 days</u>				Preservatives																		
Date Rec'd <u>12/15/03</u> Date Due <u>1-14-03</u>				ANALYSES REQUESTED →		<div style="display: flex; justify-content: space-between;"> <div>             ORGANIC              VOA BNA Pest/POB Herb PCBs           </div> <div>             INORG              Metal CN           </div> </div>																
<b>MATRIX CODES:</b> S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - EP/TCLP WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only															
							<div style="display: flex; justify-content: space-around;"> <span>MS</span><span>MSD</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>4290</span><span>0008</span><span>0006</span><span>0007</span><span>0008</span><span>0009</span><span>0010</span><span>0011</span><span>0012</span><span>0013</span><span>0014</span><span>0015</span><span>0016</span><span>0017</span><span>0018</span><span>0019</span><span>0020</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0021</span><span>0022</span><span>0023</span><span>0024</span><span>0025</span><span>0026</span><span>0027</span><span>0028</span><span>0029</span><span>0030</span><span>0031</span><span>0032</span><span>0033</span><span>0034</span><span>0035</span><span>0036</span><span>0037</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0038</span><span>0039</span><span>0040</span><span>0041</span><span>0042</span><span>0043</span><span>0044</span><span>0045</span><span>0046</span><span>0047</span><span>0048</span><span>0049</span><span>0050</span><span>0051</span><span>0052</span><span>0053</span><span>0054</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0055</span><span>0056</span><span>0057</span><span>0058</span><span>0059</span><span>0060</span><span>0061</span><span>0062</span><span>0063</span><span>0064</span><span>0065</span><span>0066</span><span>0067</span><span>0068</span><span>0069</span><span>0070</span><span>0071</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0072</span><span>0073</span><span>0074</span><span>0075</span><span>0076</span><span>0077</span><span>0078</span><span>0079</span><span>0080</span><span>0081</span><span>0082</span><span>0083</span><span>0084</span><span>0085</span><span>0086</span><span>0087</span><span>0088</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0089</span><span>0090</span><span>0091</span><span>0092</span><span>0093</span><span>0094</span><span>0095</span><span>0096</span><span>0097</span><span>0098</span><span>0099</span><span>0100</span><span>0101</span><span>0102</span><span>0103</span><span>0104</span><span>0105</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0106</span><span>0107</span><span>0108</span><span>0109</span><span>0110</span><span>0111</span><span>0112</span><span>0113</span><span>0114</span><span>0115</span><span>0116</span><span>0117</span><span>0118</span><span>0119</span><span>0120</span><span>0121</span><span>0122</span> </div>															
							<div style="display: flex; justify-content: space-around;"> <span>0123</span><span>0124</span><span>0125</span><span>0126</span><span>0127</span><span>0128</span><span>0129</span><span>0130</span><span>0131</span><span>0132</span><span>0133</span><span>0134</span><span>0135</span><span>0136</span><span>0137</span><span>0138</span><span>0139</span> </div>															

Special Instructions:

SAF # F03-025

Run Matrix QC

MET ①: RCRA + Sb, Be, Bi, Cu, Ni

IC ①: Cl, F, NO<sub>2</sub>, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>

DATE/REVISIONS:

(2-19-03) 1. Add 08015 to -004

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

Lionville Laboratory Use Only

Samples were:

1) Shipped \_\_\_\_\_ or

Hand Delivered \_\_\_\_\_

Airbill # \_\_\_\_\_

2) Ambient or Chilled

3) Received in Good

Condition Y or N

4) Samples

Properly Preserved

Y or N

5) Received Within

Holding Times

Y or N

Tamper Resistant Seal was:

1) Present on Outer

Package Y or N

2) Unbroken on Outer

Package Y or N

3) Present on Sample

Y or N

4) Unbroken on

Sample Y or N

COC Record Present

Upon Sample Rec'd

Y or N

Cooler

Temp. \_\_\_\_\_ °C

 Discrepancies Between  
 Samples Labels and  
 COC Record? Y or N  
 NOTES:

Relinquished by	Received by	Date	Time
FedEx	JPerry	12/15/03	0950

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-025-001		Page 1 of 1	
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <b>MO 10-21-03</b> <b>EBERLINE SERVICES (Formerly TMA)</b> <i>Recra</i>		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPC</b>							
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C					
				Type of Container	aG	aG					
				No. of Container(s)	1	1					
				Volume	60mL	60mL					
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151						
Sample No.	Matrix *	Sample Date	Sample Time								
B17RY5	SOIL	12-5-3	15:00	✓	—					TLE TO	B17RY6
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>			
<i>Kevin D. Hughes</i>		12-5-3 16:00		MO-026 Fridge #1		12-5-3 16:00					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
MO-026 Fridge #1		12/8/03 1230		Greg Thomas		12/8/03 1230					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Greg Thomas		12/8/03 1245		Dennis Jones		12/8/03 1245					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil DS=Drun Solids DL=Drun Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
SAGEAR		12-12-03		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FedEx		12/15/03 0950		JPerry							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1	
Collector: <u>POPE / PETER / HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MP 10-29-03 Recra</u> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SEE OSLC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
				SAMPLE ANALYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time						
B17RT3	SOIL	12-6-3	15:45	-					TLE TO B17RT5
B17RT6	SOIL	12-6-3	15:45	-					TLE TO B17RT5
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Sr</p> <p>RP 12/2/3</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 11 on 12/12/03</p>	
Kevin N. Hughes		12-6-3 1800		MO 026 Fridge #2		12-6-3 1800			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
MO 026 Fridge #2		12/8/03 1230		Greg Thomas		12/8/03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Greg Thomas		12/8/03 1245		David St John		12/8/03 1245			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other</p>	
S. J. GALE		12/12/03 1000		FGD EX					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
FedEx		12/15/03 0950		JPCray					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

A-6003-618(03/03)

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-005</b>		Page 1 of 1										
Collector <b>DOPE, PHOS, HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>										
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>												
Ice Chest No. <b>ERC 02501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS												
Shipped To <b>MS 1029-02 Reera</b> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPC</b>														
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None												
				Type of Container	G	G/P												
				No. of Container(s)	1	1												
				Volume	250mL	250mL												
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.													
Sample No.	Matrix *	Sample Date	Sample Time															
B17RV5	SOIL	12-7-3	14:10	X														
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
<b>Kevin Hughes</b>		12-7-3		<b>MS 026 Fridge #1</b>		12-7-3/16:40												
<b>MS 026 Ref #1</b>		12/8/03		<b>Greg Thomas</b>		12/8/03												
<b>Greg Thomas</b>		12/8/03		<b>Paula St. John</b>		12/08/03 1245												
<b>SIGNLEDAL</b>		12-12-03 0930		<b>FED EX</b>														
<b>FED EX</b>		12/15/03 0950		<b>JPC</b>														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time										
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time										

ELUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1	
Collector	Dore Probes / Adhesives		Company Contact	Telephone No.	Project Coordinator	Price Code		Data Turnaround	
		TRENT, STEVE		373-5689	TRENT, SJ	8N		45 Days	
Project Designation		Sampling Location		SAF No.		Air Quality			
200-LW-1/LW-2 Characterization - Soil		216-B-58 (97.5 -100 ft)		F03-025					
Ice Chest No.		Field Logbook No.		COA		Method of Shipment			
ERC 02 501		NMF 3561		119143ES10		FEDERAL EXPRESS			
Shipped To		Offsite Property No.		Bill of Lading/Air Bill No.					
TMS 10-29-03 Pera		A040 059		See 03 PC					
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation		Cool 4C	None				
Special Handling and/or Storage		Type of Container		G	G/P				
		No. of Container(s)		1	1				
		Volume		250mL	250mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
The Hanford Corporation		12-10-03 1515		Fridge #1 MO-026		12-10-03 1515			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Fridge #1 MO-026		12-11-03 1000		The Hanford Corporation		12-11-03 1000			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
The Hanford Corporation		12-11-03 1010		KEF #38 3728		12-11-03 1010			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
KEF 38 3728		12-12-03 1100		WALSH, J. L.		12-12-03 1100			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
J. J. Walsh		12-12-03 1100		FED EX					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
FedEx		12-15-03 0950		JPerry					
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1	
Collector <u>Doyle / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <u>ERC 02 501</u>		Field Logbook No. <u>HNF-12-386-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>TRISIO-24-03</u> <u>EDERLINE SERVICES (Formerly TMA)</u> <u>Recca</u>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>508 037C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<u>TRP TO B17RV1</u>
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spas - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium-3, Carbon-14, Strontium-89,90 - Total Sr <u>RP 12/2/3</u>	
<u>Kay D. Jones</u>		<u>12-7-3</u>		<u>Site trailer RMA Friday 12-7-3</u>		<u>1600</u>			
<u>She Trailer RMA Friday 12-9-03</u>		<u>1230</u>		<u>Mr. Hansen / Mr. Hansen</u>		<u>1230</u>			
<u>Mr. Hansen</u>		<u>12-9-03</u>		<u>Ref # 2</u>		<u>12-9-03 1430</u>			
<u>Ref # 2</u>		<u>12-11-03</u>		<u>Mr. Hansen / Mr. Hansen</u>		<u>1000</u>			
<u>Ref # 1A 3728</u>		<u>12-11-03</u>		<u>Ref # 1A 3728</u>		<u>1010</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 <u>Ref # 1A on 12/12/03</u>	
<u>Ref # 1A 3728</u>		<u>12-12-03</u>		<u>W. Hansen</u>		<u>1100</u>			
<u>W. Hansen</u>		<u>12-12-03</u>		<u>FED EX</u>		<u>1100</u>			
LABORATORY SECTION		Received By				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Date/Time			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** TNU- HANFOW

**Date:** 12-15-03

**Purchase Order / Project# /**

**SAFE# / SOW# / Release #:** F03-025

**LvLI Batch #:**

0312L369

**Sample Custodian:**

*[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

1. Samples Hand Delivered or Shipped

Carrier *Fed Ex*

Airbill# 792389388227

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp *1.5* °C

Cooler # *ERC-02-501*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☐ No

13. VOA, TOC, TOX free of headspace?

☐ Yes

☐ No

☒ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

☐ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

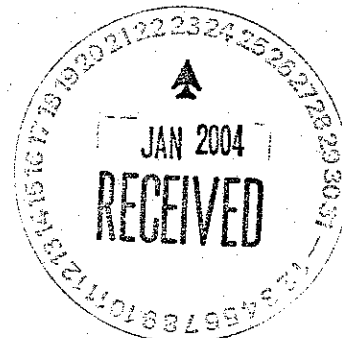
☒ No Discrepancies





21 January 2004

Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352



**Subject: Contract No. 630**  
**Analytical Data Package**

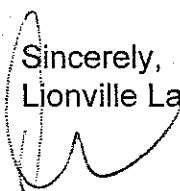
Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

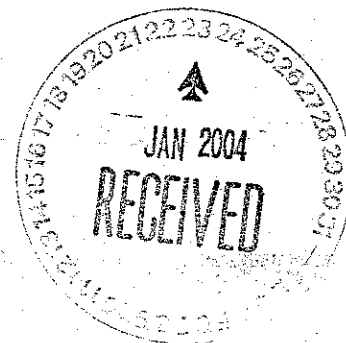
LvLI Batch #	0312L429
SDG #	H2461
SAF #	F03-025
Date Received	12-15-03
# Samples	1
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

  
Orlette S. Johnson  
Project Manager

r:\group\pm\orlette\tnu-hanford\data\fc\_ltrs.doc



Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

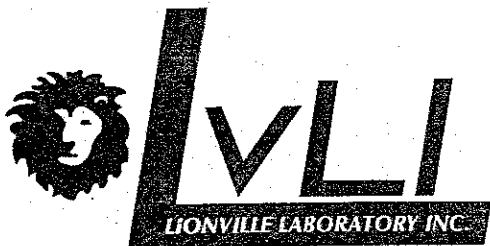
DATE RECEIVED: 12/15/03

LVL LOT # :0312L429

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B183L4						
% SOLIDS	001	S	03L&S192	12/06/03	12/15/03	12/16/03
CHROMIUM VI	001	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	001 REP	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	001 MS	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	001 MSD	S	03LVI086	12/06/03	12/21/03	12/21/03
NITRATE NITRITE	001	S	03LN3072	12/06/03	12/24/03	12/24/03
NITRATE NITRITE	001 REP	S	03LN3072	12/06/03	12/24/03	12/24/03
NITRATE NITRITE	001 MS	S	03LN3072	12/06/03	12/24/03	12/24/03

LAB QC:

CHROMIUM VI	MB1	S	03LVI086	N/A	12/21/03	12/21/03
CHROMIUM VI	MB1 BS	S	03LVI086	N/A	12/21/03	12/21/03
CHROMIUM VI	MB1 BSD	S	03LVI086	N/A	12/21/03	12/21/03
NITRATE NITRITE	MB1	S	03LN3072	N/A	12/24/03	12/24/03
NITRATE NITRITE	MB1 BS	S	03LN3072	N/A	12/24/03	12/24/03



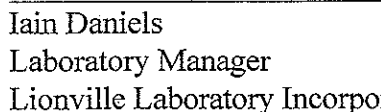
## Analytical Report

Client: TNU-HANFORD F03-025 H2461  
LVL#: 0312L429

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-03

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.
2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that met LVL's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries for Chromium VI and Nitrate Nitrite were within the 75-125% control limits.
8. The replicate analyses for Chromium VI and Nitrate Nitrite were within the 20% Relative Percent Difference (RPD) control limit.
9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

njpl12-429

01-20-04  
Date

02

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	✓ — D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— 9081	— c
Chromium VI		✓ — 3060A/7196A	
Corrosivity — by coupon — by pH		— 1110(mod) — 9045C	
Cyanide, Total		— 9010B	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— 9071A	
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions — D240-87(mod)		— 5050	
Petroleum Hydrocarbons, Total Recoverable		— 9071	— EPA 418.1
pH, Soil		— 9045C	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	
Other: <i>Nitrate &amp; Nitrite</i>	Method:	<i>EPA 353.2(mod.)</i>	
Other:	Method		

## Lionville Laboratory Incorporated

### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### ABBREVIATIONS

- MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LC = Laboratory Control Sample.  
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L429

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B183L4	% Solids	92.5	%	0.01	1.0
		Chromium VI	0.22 u	MG/KG	0.22	1.0
		Nitrate Nitrite	1.9	MG/KG	0.21	1.0

Lienville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L429

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	03LVI086-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	03LN3072-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L429

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B183L4	Soluble Chromium VI	4.4	0.22 u	4.3	102.4	1.0
		Insoluble Chromium VI	1360	0.22 u	1350	100.9	100
		Nitrate Nitrite	8.5	1.9	6.0	109.9	1.0
BLANK10	03LVI086-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100.0	1.0
		Insoluble Chromium VI	1310	0.20u	1250	105.2	100
BLANK10	03LN3072-MB1	Nitrate Nitrite	5.1	0.20u	5.0	102.2	1.0



Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461

LVL LOT #: 0312L429

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	B183L4	Chromium VI	0.22u	0.22u	NC	1.0
		Nitrate Nitrite	1.9	1.8	5.5	1.0

0312L429

# Custody Transfer Record/Lab Work Request Page 1 of 1

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**[illegible]

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-020-002</b>		Page 1 of 1	
Collector Pope/Pfister/Hughes		Company Contact Steve Trent		Telephone No. 373-5869		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days	
Project Designation 216-B-26 Characterization Sampling - Soil Sampling		Sampling Location C3245 (9.5-12 ft) (3.5 - 16.0 ft)		SAFARI 12-6-3 F03-020 F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 02501		Field Logbook No. HNF-N-350-1		COA 119142ES10		Method of Shipment Federal Express		12-6-3 Cont Vehicle Federal express	
Shipped To BERLINE SERVICES (Formerly TMA) RECRA		Offsite Property No. A040 059				Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	aG	aG			
				No. of Container(s)	1	1			
				Volume	120mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196; NO2/NO3 - 353.2	See item (1) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B183L4	SOIL	12-6-3	14:30	-	F				TIE TO B17RT 2
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>			
Relinquished By/Removed From Kevin Hughes 12/6/03		Date/Time 12/6/03		Received By/Stored In MO-026 Fridge #2		Date/Time 12-6-3/1800		(1) Isotopic Thorium (Thorium-232); Strontium-89,90 -- Total Sr; Nickel-63; Technetium-99; Carbon-14; Tritium - H3; Gamma Spec - Radium (Radium-226, Radium-228)  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03	
Relinquished By/Removed From MO-026 Fridge #1		Date/Time 12/8/03		Received By/Stored In Greg Thomas		Date/Time 12/8/03			
Relinquished By/Removed From Greg Thomas		Date/Time 12/8/03		Received By/Stored In Dana Strohman		Date/Time 12/08/03 1245			
Relinquished By/Removed From SKAL-01/AL-12		Date/Time 12/12/03 1000		Received By/Stored In FED EX		Date/Time			
Relinquished By/Removed From Fridge		Date/Time 12-15-03 0950		Received By/Stored In D. R. ...		Date/Time 12-15-03 0950			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** TNU HANFORD

**Date:** 12-15-03

Purchase Order / Project# /

~~SAF#~~ SOW# / Release #: F03-020

**LvLI Batch #:**

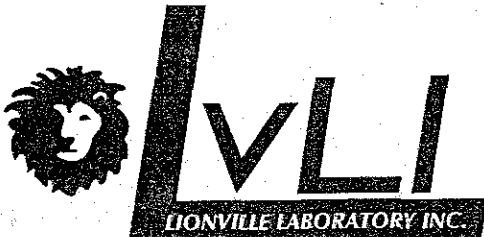
0312L368/0312L429

**Sample Custodian:**

*V. Henry*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |                             |  |                   |                       |
|---|---|-----------------------------|--|-------------------|-----------------------|
| 1. Samples Hand Delivered or Shipped  | Carrier                                 | <i>FedEx</i>                |  | Airbill#          | <i>7923 8938 8227</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    | Comments          |                       |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 5. Samples received cooled or ambient?  | Temp                                    | °C                          | Cooler #   | <i>ERC-02-501</i> |                       |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |                   |                       |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                   |                       |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                   |                       |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                   |                       |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies |                   |                       |



21 January 2004

Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352

**Subject: Contract No. 630**  
**Analytical Data Package**

Dear Mr. Trent:

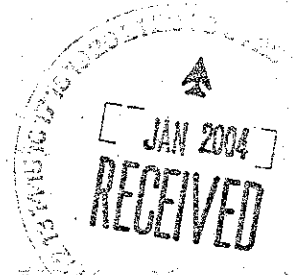
Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0312L402
SDG #	H2461/H2470
SAF #	F03-025
Date Received	12-18-03
# Samples	4
Matrix	Soil
Volatiles	X
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	X
Herbicides	
GC Alcohol	
Metals	
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

  
Orlette S. Johnson  
Project Manager



Lionville Laboratory, Inc.  
VOA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD F03-025 ~~H2470~~ H2461

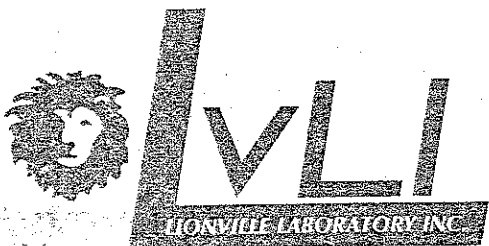
DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT3	001	S	03LVX403	12/06/03	N/A	12/22/03
B17RT3	001 MS	S	03LVX403	12/06/03	N/A	12/22/03
B17RT3	001 MSD	S	03LVX403	12/06/03	N/A	12/22/03

LAB QC:

VELKSI	MB1	S	03LVX403	N/A	N/A	12/22/03
VELKSI	MB1 BS	S	03LVX403	N/A	N/A	12/22/03



Client: TNU-HANFORD F03-025

LVL #: 0312L402

SDG/SAF #H2470/F03-025

GC/MS VOLATILE

W.O. #: 11343-606-001-9999-00

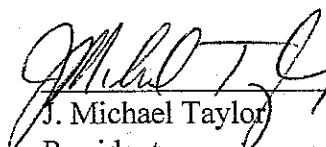
Date Received: 12-18-2003

One (1) soil sample was collected on 12-06-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 12-22-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was received outside holding time; consequently, the sample was analyzed within 4-days from sample receipt.
3. Non-target compounds were not detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

1/15/04  
Date

som\group\data\voa\tnu-hanford\0312-402.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

## GLOSSARY

### DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.



## GLOSSARY

### ABBREVIATIONS

<b>BS</b>	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
<b>BSD</b>	=	Indicates blank spike duplicate.
<b>MS</b>	=	Indicates matrix spike.
<b>MSD</b>	=	Indicates matrix spike duplicate.
<b>DL</b>	=	Suffix added to sample number to indicate that results are from a diluted analysis.
<b>NA</b>	=	Not Applicable.
<b>DF</b>	=	Dilution Factor.
<b>NR</b>	=	Not Required.
<b>SP, Z</b>	=	Indicates Spiked Compound.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP - **Missed Peak:** Manually added peak not found by automatic quan program.
- PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.
- RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

## Volatiles by GC/MS, HSL List

Report Date: 12/30/03 11:21

Client: TNU-HANFORD F03-025, ~~112470~~ Work Order: 11343606001 Page: 1a

H2461 03 1/16/04

	Cust ID:	B17RT3	B17RT3	B17RT3	VBLKSI	VBLKSI BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LVX403-MB1	03LVX403-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.962	1.02	1.02	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Toluene-d8		105 %	102 %	98 %	102 %	98 %
Surrogate Bromofluorobenzene		86 %	83 %	79 %	86 %	83 %
Recovery 1,2-Dichloroethane-d4		88 %	82 %	77 %	77 %	76 %
=====fl=====fl=====fl=====fl=====fl=====fl=====						
Chloromethane		10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U
Methylene Chloride		10 B	13 B	13 B	4 J	4 BJ
Acetone		10 U	10 U	10 U	10 U	10 U
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	99 %	98 %	5 U	91 %
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Trichloroethene		5 U	92 %	93 %	5 U	92 %
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U
Benzene		5 U	93 %	93 %	5 U	88 %
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U
Toluene		5 U	103 %	103 %	5 U	95 %

\*= Outside of EPA CLP QC limits.

Cust ID: B17RT3 B17RT3 *H2461* B17RT3 VBLKSI VBLKSI BS

RFW#: 001 001 MS *05 1/16/04* 001 MSD 03LVX403-MB1 03LVX403-MB1

Chlorobenzene	5 U	94 %	94 %	5 U	90 %
Ethylbenzene	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U

\*= Outside of EPA CLP QC limits.



## FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TRU- HANFORD SAF # F03-025 Refrigerator # 1 6 6

Est. Final Proj. Sampling Date \_\_\_\_\_ #/Type Container Liquid 2AG AG AG

Project # 11242-606-001-9999-00 Liquid 40 40 250

Project Contact/Phone # \_\_\_\_\_ Solid 40 40 250

Lionville Laboratory Project Manager OW Preservatives \_\_\_\_\_

QC SPEC Del SPD TAT 30 days ANALYSES REQUESTED TPH

Date Rec'd 12-18-03 Date Due 1-17-04 ORGANIC TPH INORG Metals NO2 NO3 GR

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
			MS	MSD				VOA	BNA	Pes/PCB	Herb	TPH	Metal	NO	NO2	NO3	GR	GR	GR
S - Soil	001	B17 RT 3			S	12-18-03	1545	2											
SE - Sediment	002	L V8			L	12-18-03	0840												
SO - Solid	003	L W1			L	12-19-03	1125												
SL - Sludge	004	B17 RT 3			S	12-18-03	1030												
W - Water																			
O - Oil																			
A - Air																			
DS - Drum																			
DL - Drum																			
L - EP/TOLP																			
Leachate																			
WI - Wipe																			
X - Other																			
F - Fish																			

Special Instructions: SAF # F03-025

Run Matrix QC

## DATE/REVISIONS:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## Lionville Laboratory Use Only

- Samples were: \_\_\_\_\_
- 1) Shipped \_\_\_\_\_ or \_\_\_\_\_
- Hand Delivered \_\_\_\_\_
- Airbill # \_\_\_\_\_
- 2) Ambient or Chilled \_\_\_\_\_
- 3) Received in Good Condition \_\_\_\_\_
- 4) Samples Properly Preserved \_\_\_\_\_
- 5) Received Within Holding Times \_\_\_\_\_
- Tamper Resistant Seal was:
- 1) Present on Outer Package Y or N
- 2) Unbroken on Outer Package Y or N
- 3) Present on Sample Y or N
- 4) Unbroken on Sample Y or N
- COC Record Present Upon Sample Rec't Y or N
- Cooler Temp. \_\_\_\_\_ °C

Relinquished by	Received by	Date	Time
<u>Fred E. ...</u>	<u>[Signature]</u>	<u>12/18/03</u>	<u>1040</u>

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	<u>ORIGINAL REWRITTEN</u>		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

FLUOR Hanford Inc. <i>Johansen</i>		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1											
Collector <i>Dope / Hester / Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days											
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>													
Ice Chest No. <i>ERC 02505</i>		Field Logbook No. <i>BNF-N-330-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS													
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040064</i>		Bill of Lading/Air Bill No. <i>SEE OSPL</i>															
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Bad into B17RT5</i> Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C												
				Type of Container		aGs*	aG												
				No. of Container(s)															
				Volume		40mL	120mL 40mL												
SAMPLE ANALYSIS				VOA - 8260A (TCL)		See item (1) in Special Instructions.													
Sample No.		Matrix *		Sample Date		Sample Time													
B17RT3		SOIL		12-6-03		1545		X	X										
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>TPH 12-11-03 / SKT</i> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range of organics from the WTPH-D analysis. See SAF COC Comments for holding time issues. (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G				Matrix * S=Soil SE=Sediment SO=Solid St=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>TPH 12-11-03</i>		<i>1530</i>		<i>TPH 12-11-03</i>		<i>1530</i>													

LABORATORY SECTION		Received By		Title		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time	

[illegible]

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-006		Page 1 of 2	
Collector <i>Pope/Hughes</i>	Company Contact TRENT, STEVE	Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround <i>45 Days</i>	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (35 - 37.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>				
Ice Chest No. <i>GAP-05-011</i>	Field Logbook No. <i>HNF-3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS				
Shipped To <i>JMS 10-29-03</i> <i>EDERLINE SERVICES (Formerly TMA) Beera</i>		Offsite Property No.		Bill of Lading/Air Bill No.					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Rad to B7RW0</i> Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions. <i>RP 12-2-3</i>				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV8	SOIL	<i>12-8-03</i>	<i>0840</i>	<input checked="" type="checkbox"/>					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89, 90 - Total Sr <i>RP 12/2/3</i>	
<i>Kevin D. Hughes</i>		<i>12-8-03</i>		<i>Site fridge RMA 26B</i>		<i>12-8-03</i>			
<i>Site fridge RMA 26B</i>		<i>12-9-03</i>		<i>Kevin D. Hughes</i>		<i>12-9-03</i>			
<i>Kevin Hughes</i>		<i>12-9-03</i>		<i>Max Hansen</i>		<i>12-9-03</i>			
<i>Max Hansen</i>		<i>12-9-03</i>		<i>Ref #2</i>		<i>12-9-03</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>Ref #2</i>		<i>12-11-03</i>		<i>Max Hansen</i>		<i>12-11-03</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>Ref #2</i>		<i>12-11-03</i>		<i>Ref #2</i>		<i>12-11-03</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>Ref #2</i>		<i>12-11-03</i>		<i>Ref #2</i>		<i>12-11-03</i>			
LABORATORY SECTION	Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time		



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-007		Page 1 of 1	
Collector <i>Dope / Phelan / Hughes</i>	Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (52.5 - 55 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <i>ERC 02 505</i>		Field Logbook No. <i>HNF 3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <i>MD 10-29-03</i> EBERLINE SERVICES (Formerly TMA) <i>Reva</i>		Offsite Property No. <i>A040 064</i>		Bill of Lading/Air Bill No. <i>SOE OSPC</i>					
POSSIBLE SAMPLE HAZARDS/REMARKS  <i>Bad tie to B17RW13</i>					Special Handling and/or Storage				
					Preservation	Cool 4C	None		
					Type of Container	G	G/P		
					No. of Container(s)	1	1		
					Volume	250mL	250mL		
SAMPLE ANALYSIS					See item (1) in Special Instructions.	See item (2) in Special Instructions.			
					<i>ASR 12/2/03</i>				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW1	SOIL	12-9-03	11:25	X					
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				
Sign/Print Names					The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *	
<i>Kevin Hughes</i>		12-9-03 1230		<i>Tim Hansen</i>		12-9-03 1230		S=Soil	
<i>Tim Hansen</i>		12-9-03 1430		<i>REF #2</i>		12-9-03 1430		SE=Sediment	
<i>REF #2</i>		12-11-03 1000		<i>Tim Hansen</i>		12-11-03 1000		SO=Solid	
<i>Tim Hansen</i>		12-11-03 1010		<i>REF #2</i>		12-11-03 1010		SI=Sludge	
<i>REF #2</i>		12-13-03 0930		<i>M.A. Buehler</i>		12-13-03 0930		W=Water	
<i>M.A. Buehler</i>		12-13-03 0930		<i>REF #2</i>		12-13-03 0930		O=Oil	
<i>REF #2</i>		12-18-03 1040		<i>Tim Hansen</i>		12-18-03 1040		A=Air	
<i>Tim Hansen</i>		12-18-03 1040		<i>REF #2</i>		12-18-03 1040		DS=Drum Solids	
<i>REF #2</i>		12-18-03 1040		<i>Tim Hansen</i>		12-18-03 1040		DL=Drum Liquids	
<i>Tim Hansen</i>		12-18-03 1040		<i>REF #2</i>		12-18-03 1040		T=Tissue	
<i>REF #2</i>		12-18-03 1040		<i>Tim Hansen</i>		12-18-03 1040		W=Wipe	
<i>Tim Hansen</i>		12-18-03 1040		<i>REF #2</i>		12-18-03 1040		L=Liquid	
<i>REF #2</i>		12-18-03 1040		<i>Tim Hansen</i>		12-18-03 1040		V=Vegetation	
<i>Tim Hansen</i>		12-18-03 1040		<i>REF #2</i>		12-18-03 1040		X=Other	
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

A-6003-618(03/03)

*FW 12-18-03 1040* *Tim Hansen 12-18/03 1040*



**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU - HANFORD*

**Date:** *12-18-03*

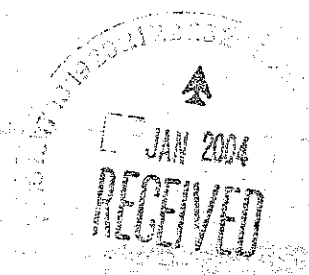
**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** *F03-025*

**LvLI Batch #:** *0312L 402*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |   |   |
|---|---|---|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>FedEx</i>  | Airbill# <i>7909 9575 7916</i><br><i>8409 6234 5150</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals      Comments         |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 5. Samples received cooled or ambient?  | Temp <i>5.5°C</i>   | Cooler # <i>ERC-02-505</i><br><i>+ 01-037</i>           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                       |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 13. VOA, TOC, TOX free of headspace?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A                            |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A                 |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies    |



Lionville Laboratory, Inc.  
DRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT3	001	S	03LE1649	12/06/03	12/19/03	01/02/04
B17RT3	001 MS	S	03LE1649	12/06/03	12/19/03	01/02/04
B17RT3	001 MSD	S	03LE1649	12/06/03	12/19/03	01/02/04

LAB QC:

BLK	MB1	S	03LE1649	N/A	12/19/03	01/02/04
BLK	MB1 BS	S	03LE1649	N/A	12/19/03	01/02/04

*Handwritten signature and date 1/15/04*



## Analytical Report

Client: TNU-HANFORD F03-025  
LVL #: 0312L402  
SDG/SAF #: H2461/F03-025

W.O. #: 11343-606-001-9999-00  
Date Received: 12-18-03

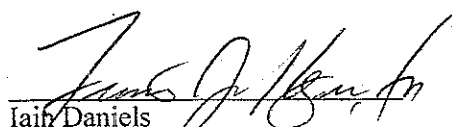
### DIESEL RANGE ORGANICS

One (1) soil sample was collected on 12-06-03.

The sample and the associated QC samples were extracted on 12-19-03 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-02-04. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Jaib Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

pefvr:\group\data\dro\tnu hanford\12L-402.doc

1/16/04  
Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.



## GLOSSARY OF DIESEL RANGE ORGANICS DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF DIESEL RANGE ORGANICS DATA

- D**     =     This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C**     =     This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 01/15/04 17:53

RFW Batch Number: 0312L402

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

	Cust ID:	B17RT3	B17RT3	B17RT3	BLK	BLK BS
Sample	RFW#:	001	001 MS	001 MSD	03LE1649-MB1	03LE1649-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	p-Terphenyl	82 %	80 %	78 %	91 %	89 %
	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Diesel Range Organics		12.3 U	74 %	77 %	12.0 U	78 %
Motor Oil		12.3 U	20.5 U	20.5 U	12.0 U	12.0 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*73/1/1/04*



0312L 402

Cooler  
Temp. \_\_\_\_\_ °C

Discrepancies Between  
Samples Labels and  
COC Record? Y or N  
NOTES:

FLUOR Hanford Inc. <i>Johansen</i>		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1											
Collector <i>Dope / Pister / Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days											
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>													
Ice Chest No. <i>ERC 02505</i>		Field Logbook No. <i>BNF-N-330-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS													
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040064</i>		Bill of Lading/Air Bill No. <i>SEE OSLC</i>															
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Bad into B17RT3</i> Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C												
				Type of Container		aGs*	aG												
				No. of Container(s)															
				Volume		40mL	40mL												
SAMPLE ANALYSIS				VOA - 8260A (TCL)		See Item (1) in Special Instructions.													
Sample No.		Matrix *		Sample Date		Sample Time													
B17RT3		SOIL		12-6-03		1545		X	X										
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>MS 12-11-03 1 OKT</i> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range of organics from the WTPH-D analysis. See SAF COC Comments for holding time issues. (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drun Solids DL=Drun Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>M. A. Bucher</i>		<i>12-11-03 1530</i>		<i>Let # 2</i>		<i>12-12-03</i>													
<i>NO. 22C, Rpt 2</i>		<i>12/17/03 0930</i>		<i>M. A. Bucher</i>		<i>12/17/03</i>													
<i>M. A. Bucher</i>		<i>12/17/03</i>		<i>Red EX</i>															
<i>Fed Ex</i>		<i>12-18-03 1040</i>		<i>O. H. H. H.</i>		<i>12-18-03 1040</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													

LABORATORY SECTION		Received By		Title		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time	



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-006		Page 1 of 2										
Collector <i>Pope/PHS/Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days										
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (35 - 37.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>												
Ice Chest No. GAP-03-011		Field Logbook No. HNF-3561		COA 119143ES10		Method of Shipment FEDERAL EXPRESS												
Shipped To <i>MS 10-29-03</i> EBERLINE SERVICES (Formerly TMA) <i>Peera</i>		Offsite Property No.				Bill of Lading/Air Bill No.												
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Rad to B7RW0</i> Special Handling and/or Storage				Preservation	Cool 4C	None												
				Type of Container	G	G/P												
				No. of Container(s)	1	1												
				Volume	250mL	250mL												
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.													
					<i>RP 12-2-3</i>													
Sample No.	Matrix *	Sample Date	Sample Time															
B17RV8	SOIL	12-8-03	0840	✓														
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium-113, Carbon-14, Strontium-89,90 -- TOTAL ST  <i>RP 12/2/3</i>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
<i>Kevin D. Hughes</i>		12-8-3		<i>Site fridge RMA 26B</i>		12-8-3												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Site fridge RMA 26B</i>		12-9-3		<i>Kevin D. Hughes</i>		12-9-3												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Kevin Hughes</i>		12-9-03		<i>Max Hansen</i>		12-9-03												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Max Hansen</i>		12-9-03 1430		<i>Ref #2</i>		12-9-03 1430												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Ref #2</i>		12-11-03 1000		<i>Max Hansen</i>		12-11-03												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Max Hansen</i>		12-11-03 1010		<i>Ref #2 MO-026</i>		12-11-03 1010												
LABORATORY SECTION		Received By		Title		Date/Time												
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time												



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-002		Page 1 of 1		
Collector <b>POPE / HUGHES / Pfister</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (12.5 - 15 ft) <b>11-13.5 ft</b>		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>		
Ice Chest No. <b>ERC 01037</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS				
Shipped To <b>EDERLINE SERVICES (Formerly TMA) - RARA</b>		Offsite Property No. <b>RSR 185826</b>		Bill of Lading/Air Bill No. <b>N/A</b>						
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <b>RADIOACTIVE</b>  Special Handling and/or Storage				Preservation	Cool 4C	None				
				Type of Container	G	G/P				
				No. of Container(s)	1	1				
				Volume	250mL	250mL				
				See item (1) in Special Instructions		See item (2) in Special Instructions				
<b>SAMPLE ANALYSIS</b>				Sample No.	Matrix *	Sample Date	Sample Time			
				B17RT0	SOIL	12-6-3	10:30			
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>		
Relinquished By/Removed From <b>Kevin Hughes</b> Date/Time <b>12-6-3 1800</b>				Received By/Stored In <b>MO026 Fridge #2</b> Date/Time <b>12-6-3/1800</b>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr  <b>ASAP 10/28/03</b>		
Relinquished By/Removed From <b>NO-026 Fridge #2</b> Date/Time <b>12/8/03</b>				Received By/Stored In <b>Greg Thomas</b> Date/Time <b>12/8/03</b>						
Relinquished By/Removed From <b>Greg Thomas</b> Date/Time <b>12/8/03</b>				Received By/Stored In <b>David S. Johnson</b> Date/Time <b>12/8/03 1245</b>						
Relinquished By/Removed From <b>SJ GALEA</b> Date/Time <b>12-17-03 0930</b>				Received By/Stored In <b>FED EX</b> Date/Time						
Relinquished By/Removed From <b>FWD</b> Date/Time <b>12-18-03 1040</b>				Received By/Stored In <b>ASAP</b> Date/Time <b>12-18-03 1040</b>						
Relinquished By/Removed From				Received By/Stored In						
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

Lionville Laboratory Incorporated  
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU - HANFORD*

Date: *12-18-03*

Purchase Order / Project# /  
SAF# / SOW# / Release #: *F03-025*

LvLI Batch #: *0312L 402*

Sample Custodian: *Vicki King*

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped

Carrier *Fed Ex*

Airbill# *7909 9575 7916*  
*8409 6234 5150*

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp *5.5°C*

Cooler # *ERC-02-505*  
*+ 01-037*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☐ No

13. VOA, TOC, TOX free of headspace?

☒ Yes

☐ No

☐ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

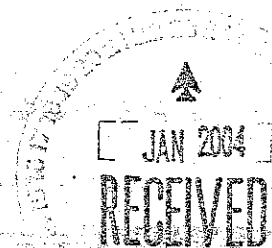
☐ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

☒ No  
Discrepancies



Lionville Laboratory, Inc.  
GRO ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT3	001	S	03LVJC23	12/06/03	N/A	12/23/03
B17RT3	001 MS	S	03LVJC23	12/06/03	N/A	12/23/03
B17RT3	001 MSD	S	03LVJC23	12/06/03	N/A	12/23/03

LAB QC:

TBLKNT	MB1	S	03LVJC23	N/A	N/A	12/23/03
TBLKNT	MB1 BS	S	03LVJC23	N/A	N/A	12/23/03

*Handwritten signature*





### Analytical Report

Client: TNU HANFORD F03-025

LVL #: 0312L402

SDG/SAF#: H2461/F03-025

W.O. #: 11343-606-001-9999-00

Date Received: 12-18-03

### GASOLINE RANGE ORGANICS

One (1) soil sample was collected on 12-06-03.

The sample and the associated QC samples were prepped and analyzed according to Lionville Laboratory SOPs based on SW846 method 8015 for Gasoline range organics (GRO) on 12-23-03. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. The sample was analyzed three days outside of recommended hold time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

  
Date

pef\Rrgroup\data\gro\tnu\12L-402.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0466018

Initiator: John Leach  
Date: 11/15/04  
Client: TNU

Batch: 0312 L 402  
Samples: All  
Method: SW846/MCAWW/CLP/

Parameter: Gasoline Range Comp  
Matrix: Soil  
Prep Batch: 03LVTJL27

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other \_\_\_\_\_

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: \* Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

## c. Problem (Include all relevant specific results; attach data if necessary)

Samples run 3 Days past hold

## 2. Known or Probable Causes(s)

Samples received 12 Days into hold. on Friday

## 3. Discussion and Proposed Action

Other Description:

☐ Re-log  
☐ Entire Batch  
☐ Following Samples: \_\_\_\_\_  
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to \_\_\_\_\_  
☐ Place On/Take Off Hold (circle)

None

## 4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☐ Include in Case Narrative  
☐ Client Contacted:  
Date/Person \_\_\_\_\_  
☐ Add  
☐ Cancel

## 5. Final Action...signature/date:

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)  
☐ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

## Route Distribution of Completed SDR

☐ X Initiator  
☐ X Lab General Manager: M. Taylor  
☐ X Project Mgr: Stone/Johnson/Haslett  
☐ X Technical Mgr: Wesson/Daniels  
☐ X QA (file): Alberts  
☐ Data Management: Feldman  
☐ Sample Prep: Beegle/Kiger

## Route Distribution of Completed SDR

☐ Metals: Beegle  
☐ Inorganic: Perrone  
☐ GC/LC: Kiger  
☐ MS: Rychlak/Layman  
☐ Log-in: Melnic  
☐ Admin: Soos  
☐ Other: \_\_\_\_\_



## GLOSSARY OF GASOLINE RANGE ORGANICS DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L, and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

## Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 01/15/04 16:59

RFW Batch Number: 0312L402

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

	Cust ID:	B17RT3	B17RT3	B17RT3	TBLKNT	TBLKNT BS
Sample	RFW#:	001	001 MS	001 MSD	03LVJC23-MB1	03LVJC23-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Fluorobenzene	99 %	88 %	95 %	106 %	110 %
	=====fl=====					
Gasoline Range Organics (GRO)		30 U	109 %	73 %	30 U	110 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

75 1/15/04

0312L 402

## FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU - HANFORD SAF # F03-025</u>	Refrigerator # <u>1</u>	<u>6</u>	<u>6</u>
Est. Final Proj. Sampling Date <u>11/3/03 - 606 - 001 - 9999.00</u>	#/Type Container	Liquid <u>2AC</u>	<u>1AC</u>
Project # <u>11343-606-001-9999.00</u>	Volume	Liquid <u>40</u>	<u>250</u>
Project Contact/Phone # <u>05</u>	Preservatives	<u>-</u>	<u>-</u>
Lionville Laboratory Project Manager <u>05</u>	ANALYSES REQUESTED	ORGANIC	INORG
QC <u>SPEC</u> Del <u>SPD</u> TAT <u>30 days</u>	VOA	BNA	Pest/PCB
Date Rec'd <u>12-18-03</u> Date Due <u>1-17-04</u>	Herb	<u>TPH</u>	Metal

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
			MS	MSD				0624	0620	0620	0620	0620	0620	0620	0620	0620	0620	0620	0620
	001	B17 RT 3			S	12/6/03	1545	2											
	002	L V8			L	12/8/03	0840												
	003	L W1			L	12/9/03	1125												
	004	B17 RTD			S	12/10/03	1030												

Special Instructions: SAF # F03-025

Run Matrix QC

## DATE/REVISIONS:

1.	
2.	
3.	
4.	
5.	
6.	

## Lionville Laboratory Use Only

Samples were:	Tamper Resistant Seal was:
1) Shipped _____ or	1) Present on Outer
Hand Delivered _____	Package Y or N
Airbill # _____	2) Unbroken on Outer
	Package Y or N
2) Ambient or Chilled _____	3) Present on Sample
	Y or N
3) Received in Good Condition Y or N	4) Unbroken on
4) Samples Properly Preserved Y or N	Sample Y or N
	COC Record Present
	Upon Sample Rec't
5) Received Within Holding Times Y or N	Y or N
	Cooler
	Temp. _____ °C

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
<u>for Ep</u>	<u>for Ep</u>	<u>12/18/03</u>	<u>1040</u>	"COMPOSITE WASTE"	<u>ORIGINAL REWRITTEN</u>		

 Discrepancies Between  
Samples Labels and  
COC Record? Y or N  
NOTES:

FLUOR Hanford Inc. <i>Johansen</i>		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1											
Collector <i>Dope Hester/Hopas</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days											
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>													
Ice Chest No. <i>ERC 02505</i>		Field Logbook No. <i>BNF-D-330-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS													
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040064</i>		Bill of Lading/Air Bill No. <i>SEE OSPL</i>															
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> <i>Bad into B17RT3</i> <b>Special Handling and/or Storage</b>				Preservation		Cool 4C	Cool 4C												
				Type of Container		aGs*	aG												
				No. of Container(s)															
				Volume		40mL	120mL <i>40mL</i>												
<b>SAMPLE ANALYSIS</b>				VOA - 8260A (TCL)		See Item (1) in Special Instructions.													
Sample No.		Matrix *		Sample Date		Sample Time													
B17RT3		SOIL		12-6-03		1545		X	X										
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b> <i>MS 12-11-03 / SKT</i>				<b>Matrix *</b>							
Relinquished By/Removed From <i>M. B. B.</i>				Received By/Stored In <i>Let # 219-0360</i>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From <i>NO. 22C, Rpt 2</i>				Received By/Stored In <i>M.A. Baehle</i>															
Relinquished By/Removed From <i>M.A. Baehle</i>				Received By/Stored In <i>Red ex</i>															
Relinquished By/Removed From <i>Fed Ex</i>				Received By/Stored In <i>O. H. H.</i>															
Relinquished By/Removed From				Received By/Stored In															
Relinquished By/Removed From				Received By/Stored In															
Relinquished By/Removed From				Received By/Stored In															
Relinquished By/Removed From				Received By/Stored In															
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time													
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time													





FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-006		Page 1 of 2													
Collector <i>Pope/Boles/Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (35 - 37.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <i>GAP-03-011</i>		Field Logbook No. <i>HNF-3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <i>JMS 10-29-03</i> <i>EBERLINE SERVICES (Formerly TMA) Peera</i>		Offsite Property No.		Bill of Lading/Air Bill No.																	
POSSIBLE SAMPLE HAZARDS/REMARKS  <i>Rad to B7RW0</i> Special Handling and/or Storage				Preservation		Cool 4C	None														
				Type of Container		G	G/P														
				No. of Container(s)		1	1														
				Volume		250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.															
Sample No.		Matrix *		Sample Date		Sample Time															
B17RV8		SOIL		12-8-03		0840		✓													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium 226, Radium 228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 - Total Sr  <i>RP 12/2/3</i>						Matrix * S=Soil SE=Sediment SO=Solid St=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Kevin D. Hughes</i>		<i>12-8-03 13:00</i>		<i>Site fridge RMA 26B</i>		<i>12-8-03 13:00</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Site fridge RMA 26B</i>		<i>12-9-03 0830</i>		<i>Kevin D. Hughes</i>		<i>12-9-03 0830</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Kevin Hughes</i>		<i>12-9-03 0830</i>		<i>Max Hansen</i>		<i>12-9-03 1230</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Max Hansen</i>		<i>12-9-03 1430</i>		<i>Ref #2</i>		<i>12-9-03 1430</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Ref #2</i>		<i>12-11-03 1000</i>		<i>Max Hansen</i>		<i>12-11-03 1000</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Max Hansen</i>		<i>12-11-03 1010</i>		<i>Ref #2</i>		<i>12-11-03 1010</i>															
LABORATORY SECTION		Received By		Title		Date/Time															
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time											

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-007		Page 1 of 1			
Collector: <u>Joe Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days			
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (52.5 - 55 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <u>ERC 02 505</u>		Field Logbook No. <u>HNF3561</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <u>MD 10-29-03</u> <u>EBERLINE SERVICES (formerly TMA)</u> <u>Deva</u>		Offsite Property No. <u>A040 064</u>		Bill of Lading/Air Bill No. <u>SOE OSPC</u>							
POSSIBLE SAMPLE HAZARDS/REMARKS  <u>Red tie to B17RW3</u>  Special Handling and/or Storage				Preservation	Cool 4C	None					
				Type of Container	G	G/P					
				No. of Container(s)	1	1					
				Volume	250mL	250mL					
				See item (1) in Special Instructions.		See item (2) in Special Instructions.					
SAMPLE ANALYSIS											
Sample No.	Matrix *	Sample Date	Sample Time								
B17RW1	SOIL	12-9-03	11:25	X							
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226; Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr <u>98-12/2/03</u>			
<u>Kevin Hughes</u>		<u>12-9-03 1230</u>		<u>Tim Hansen</u>		<u>12-9-03 1230</u>					
<u>Tim Hansen</u>		<u>12-9-03 1430</u>		<u>KE #2</u>		<u>12-9-03 1430</u>					
<u>KE #2</u>		<u>12-11-03 1000</u>		<u>Tim Hansen</u>		<u>12-11-03 1000</u>					
<u>Tim Hansen</u>		<u>12-11-03 1010</u>		<u>KE #2</u>		<u>12-11-03 1010</u>					
<u>KE #2</u>		<u>12-13-03 0930</u>		<u>M. A. Buehler</u>		<u>12-13-03 0930</u>		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other			
<u>M. A. Buehler</u>		<u>12-17-03</u>		<u>KE #2</u>		<u>12-17-03</u>					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

A-6003-618(03/03)

File 12-18-03 1040 Vald Hand 12-18/03 1040

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-002		Page 1 of 1								
Collector <u>POPE / HUGHES / Pfister</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (12-13 ft) <u>11-13.5 ft</u>		SAF No. F03-025		Air Quality <input type="checkbox"/>										
Ice Chest No. <u>ERC 01037</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <u>AM 12/28/03</u> <u>EDERLINE SERVICES (Formerly TMA) - RORA</u>		Offsite Property No. <u>RSR 185826</u>		Bill of Lading/Air Bill No. <u>N/A</u>												
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <u>RADIOACTIVE</u> Special Handling and/or Storage				Preservation	Cool 4C	None										
				Type of Container	G	G/P										
				No. of Container(s)	1	1										
				Volume	250mL	250mL										
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.	See item (2) in Special Instructions.											
Sample No.		Matrix *		Sample Date		Sample Time										
B17RT0		SOIL		12-6-3		10:30										
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr  <u>ASR 12/28/03</u>  Personnel not available to Relinquish samples from 3728 Ref # <u>1A</u> on <u>12/17/03</u>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
<u>Kevin Hughes</u>		<u>12-6-3 1800</u>		<u>MO026 Fridge #2</u>		<u>12-6-3/1800</u>										
<u>NO-026 Fridge #2</u>		<u>12/8/03 1230</u>		<u>Greg Thomas</u>		<u>12/8/03 1230</u>										
<u>Greg Thomas</u>		<u>12/8/03 1245</u>		<u>Hand S. 30m ERC</u>		<u>12/08/03 1245</u>										
<u>SJ GALEA</u>		<u>12-17-03 0930</u>		<u>FED EX</u>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<u>EWCP</u>		<u>12-18-03 1040</u>		<u>P. Hand</u>		<u>12-18-03 1040</u>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time								
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time								

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU - HANFORD*

**Date:** *12-18-03*

**Purchase Order / Project# /** *F03-025*  
**SAF# / SOW# / Release #:**

**LvLI Batch #:** *0312L 402*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |   |   |
|---|---|---|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed Ex</i>   | Airbill# <i>7909 9575 7916</i><br><i>8409 6234 5150</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals      Comments         |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 5. Samples received cooled or ambient?  | Temp <i>5.5°C</i>   | Cooler # <i>ERC-02-505</i><br><i>+ 01-037</i>           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                       |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 13. VOA, TOC, TOX free of headspace?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A                            |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A                 |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies    |

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2470



DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT3						
% SOLIDS	001	S	03L%S195	12/06/03	12/18/03	12/19/03
B17RV8						
% SOLIDS	002	S	03L%S196	12/08/03	12/19/03	12/22/03
% SOLIDS	002 REP	S	03L%S196	12/08/03	12/19/03	12/22/03
CHROMIUM VI	002	S	03LVI089	12/08/03	12/31/03	12/31/03
NITRATE NITRITE	002	S	03LN3074	12/08/03	12/29/03	12/31/03
OIL & GREASE BY GRAV	002	S	03LOG059	12/08/03	12/31/03	01/02/04
SULFIDE	002	S	03LSD061	12/08/03	12/22/03	12/23/03
B17RW1						
% SOLIDS	003	S	03L%S195	12/09/03	12/18/03	12/19/03
CHROMIUM VI	003	S	03LVI089	12/09/03	12/31/03	12/31/03
CHROMIUM VI	003 REP	S	03LVI089	12/09/03	12/31/03	12/31/03
CHROMIUM VI	003 MS	S	03LVI089	12/09/03	12/31/03	12/31/03
CHROMIUM VI	003 MSD	S	03LVI089	12/09/03	12/31/03	12/31/03
NITRATE NITRITE	003	S	03LN3074	12/09/03	12/29/03	12/31/03
NITRATE NITRITE	003 REP	S	03LN3074	12/09/03	12/29/03	12/31/03
NITRATE NITRITE	003 MS	S	03LN3074	12/09/03	12/29/03	12/31/03
OIL & GREASE BY GRAV	003	S	03LOG059	12/09/03	12/31/03	01/02/04
SULFIDE	003	S	03LSD061	12/09/03	12/22/03	12/23/03
B17RT0						
% SOLIDS	004	S	03L%S195	12/06/03	12/18/03	12/19/03
CHROMIUM VI	004	S	03LVI089	12/06/03	12/31/03	12/31/03
NITRATE NITRITE	004	S	03LN3074	12/06/03	12/29/03	12/31/03
OIL & GREASE BY GRAV	004	S	03LOG059	12/06/03	12/31/03	01/02/04
OIL AND GREASE BY GR	004 REP	S	03LOG059	12/06/03	12/31/03	01/02/04
OIL AND GREASE BY GR	004 MS	S	03LOG059	12/06/03	12/31/03	01/02/04
SULFIDE	004	S	03LSD061	12/06/03	12/22/03	12/23/03
SULFIDE	004 REP	S	03LSD061	12/06/03	12/22/03	12/23/03
SULFIDE	004 MS	S	03LSD061	12/06/03	12/22/03	12/23/03

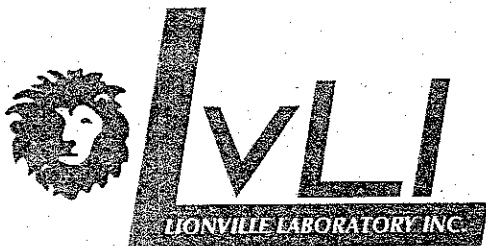
LAB QC:

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2470

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	MB1	S	03LVI089	N/A	12/31/03	12/31/03
CHROMIUM VI	MB1 BS	S	03LVI089	N/A	12/31/03	12/31/03
CHROMIUM VI	MB1 BSD	S	03LVI089	N/A	12/31/03	12/31/03
NITRATE NITRITE	MB1	S	03LN3074	N/A	12/31/03	12/31/03
NITRATE NITRITE	MB1 BS	S	03LN3074	N/A	12/31/03	12/31/03
OIL & GREASE BY GRAV	MB1	S	03LOG059	N/A	12/31/03	01/02/04
OIL AND GREASE BY GR	MB1 BS	S	03LOG059	N/A	12/31/03	01/02/04
OIL AND GREASE BY GR	MB1 BSD	S	03LOG059	N/A	12/31/03	01/02/04
SULFIDE	MB1	S	03LSD061	N/A	12/22/03	12/23/03
SULFIDE	MB1 BS	S	03LSD061	N/A	12/22/03	12/23/03



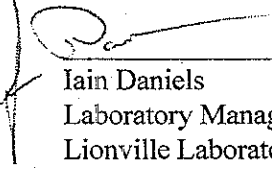
## Analytical Report

Client: TNU-HANFORD F03-025 H2470  
LVL#: 0312L402

W.O.#: 11343-606-001-9999-00  
Date Received: 12-18-03

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met with the exception of Sulfide that were received past hold.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of Sulfide as noted on the Sample Receipt Checklist.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Oil and Grease was within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Chromium VI, Nitrate Nitrite, Oil and Grease and Sulfide were within the 75-125% control limits.
8. The replicate analyses for Percent Solids, Chromium VI, Nitrate Nitrite, Oil and Grease and Sulfide were within the 20% RPD control limit.
9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

njpvl2-402

01-14-04  
Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	— ✓ D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— 9081	— c
Chromium VI		— ✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		— 1110(mod) — 9045C	
Cyanide, Total		— 9010B	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— ✓ 9071A	— ✓ 413.1 (mod.)
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	— D240-87(mod)	— 5050	
Petroleum Hydrocarbons, Total Recoverable		— 9071	— EPA 418.1
pH, Soil		— 9045C	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— ✓ 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	
Other: <i>Nitrate Nitrite</i>	Method: <i>EPA 353.2 (mod.)</i>		
Other:	Method		



## Lionville Laboratory Incorporated

# METHOD REFERENCES AND DATA QUALIFIERS

### DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

\* = Indicates that the original sample result is greater than 4x the spike amount added.

### ABBREVIATIONS

MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LC = Laboratory Control Sample.  
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/06/04

CLIENT: TNU-HANFORD P03-025 H2470  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L402

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B17RT3	% Solids	97.5	%	0.01	1.0
-002	B17RV8	% Solids	95.8	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	1.3	MG/KG	0.20	1.0
		Oil & Grease Gravimetri	696	u MG/KG	696	1.0
		Sulfide	20.4	u MG/KG	20.4	1.0
-003	B17RW1	% Solids	95.5	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	3.2	MG/KG	0.20	1.0
		Oil & Grease Gravimetri	698	u MG/KG	698	1.0
		Sulfide	21.3	u MG/KG	21.3	1.0
-004	B17RT0	% Solids	94.0	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	1.1	MG/KG	0.21	1.0
		Oil & Grease Gravimetri	709	u MG/KG	709	1.0
		Sulfide	21.9	u MG/KG	21.9	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L402

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	03LVI089-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	03LN3074-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	03LOG059-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0
BLANK10	03LSD061-MB1	Sulfide	40.0 u	MG/KG	40.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L402

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-003	B17RW1	Soluble Chromium VI	4.2	0.21u	4.2	95.3	1.0
		Insoluble Chromium VI	1070	0.21u	1020	105.0	100
		Nitrate Nitrite	16.6	3.2	12.7	105.8	2.0
-004	B17RT0	Oil & Grease Gravimetr	5570	709 u	5910	94.2	1.0
		Sulfide	161	12.6	194	76.6	1.0
BLANK10	03LVI089-MB1	Soluble Chromium VI	3.8	0.20u	4.0	95.3	1.0
		Insoluble Chromium VI	1170	0.20u	1180	99.1	100
BLANK10	03LN3074-MB1	Nitrate Nitrite	5.2	0.20u	5.0	103.2	1.0
BLANK10	03LOG059-MB1	Oil & Grease Gravimetr	5400	667 u	5560	97.1	1.0
		Oil & Grease - Grav M	5300	667 u	5560	95.0	1.0
BLANK10	03LSD061-MB1	Sulfide	339	40.0 u	379	89.4	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L402

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		
			%RECOV	%RECOV	%DIFF
BLANK10	03LOG059-MB1	Oil & Grease - Grav	97.1	95.0	2.2

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L402

SAMPLE	SITE ID	ANALYTE	INITIAL	REPLICATE RPD		DILUTION
			RESULT			FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-002REP	B17RV8	% Solids	95.8	95.8	0.00	1.0
-003REP	B17RW1	Chromium VI	0.21u	0.21u	NC	1.0
		Nitrate Nitrite	3.2	3.4	6.5	1.0
-004REP	B17RT0	Oil & Grease Gravimetri	709 u	709 u	NC	1.0
		Sulfide	21.9 u	21.7 u	NC	1.0

## FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TRUCK- HANFORD SAF # F03-025</u>	Refrigerator # <u>1</u>	<u>6</u>	<u>6</u>
Est. Final Proj. Sampling Date	#/Type Container	Liquid	
Project # <u>1343-606-001-9999-00</u>		Solid <u>2AG</u>	<u>1AG</u>
Project Contact/Phone #	Volume	Liquid	
Lionville Laboratory Project Manager <u>OS</u>		Solid <u>40</u>	<u>40</u>
QC <u>SPEC</u> Del <u>STD</u> TAT <u>30 days</u>	Preservatives		<u>250</u>
Date Rec'd <u>12-18-03</u> Date Due <u>1-17-04</u>	ANALYSES REQUESTED	ORGANIC	INORG
		VOA BNA Pest/PCB Herb	Metal N
		<u>TPH</u>	<u>Heb NO2 OIL</u>

## MATRIX CODES:

S - Soil  
SE - Sediment  
SO - Solid  
SL - Sludge  
W - Water  
O - Oil  
A - Air  
DS - Drum  
DL - Drum  
L - Liquids  
EP/TCLP  
Leachate  
WI - Wipe  
X - Other  
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
		MS	MSD				H											
001	BIT RT 3			S	12-6-03	1545	2											
002	V8			L	12-8-03	0840												
003	WI			L	12-9-03	1125												
004	BIT RT 0			S	12/6/03	1030												

Special Instructions: SAF # F03-025Run Matrix QC

## DATE/REVISIONS:

1.	
2.	
3.	
4.	
5.	
6.	

## Lionville Laboratory Use Only

Samples were:	Tamper Resistant Seal was:
1) Shipped <u>or</u>	1) Present on Outer
Hand Delivered	Package Y or N
Airbill # <u>See</u>	2) Unbroken on Outer
	Package Y or N
2) Ambient or Chilled	3) Present on Sample
	Y or N
3) Received in Good Condition <u>Y</u>	4) Unbroken on
	Sample Y or N
4) Samples Properly Preserved <u>Y</u>	COC Record Present
	Upon Sample Rec'd
5) Received Within Holding Times <u>Y</u>	Y or N
	Cooler Temp. <u>      </u> °C

Relinquished by	Received by	Date	Time
<u>F. J. E. P.</u>	<u>[Signature]</u>	<u>12/18/03</u>	<u>1040</u>

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	<u>ORIGINAL REWRITTEN</u>		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

FLUOR Hanford Inc. <i>Johansen</i>		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1			
Collector <i>Pope / Hester / Hester</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days			
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>ERC 02 505</i>		Field Logbook No. <i>BNF-D-330-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040064</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Bad Auto B17RT3</i> Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C				
				Type of Container		aGs*	aG				
				No. of Container(s)		<i>2</i>	<i>1</i>				
				Volume		40mL	<i>120mL</i> <i>40mL</i>				
SAMPLE ANALYSIS				VOA - 8260A (TCL)		See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time								
B17RT3	SOIL	<i>12-6-03</i>	<i>1545</i>	<i>X</i>	<i>X</i>						
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS <i>MAY 12-11-03 1 OKT</i> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range of organics from the WTPH-D analysis. See SAF COC Comments for holding time issues. (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G					
Relinquished By/Removed From		Date/Time		Received By/Stored In						Date/Time	
<i>M. J. B. 12-17-03 0930</i>		<i>12-17-03 0930</i>		<i>M. J. B. 12-17-03 0930</i>						<i>12-17-03 0930</i>	
<i>M. J. B. 12-17-03 0930</i>		<i>12-17-03 0930</i>		<i>M. J. B. 12-17-03 0930</i>						<i>12-17-03 0930</i>	
<i>Fed Ex 12-18-03 1040</i>		<i>12-18-03 1040</i>		<i>Fed Ex 12-18-03 1040</i>						<i>12-18-03 1040</i>	
<i>Fed Ex 12-18-03 1040</i>		<i>12-18-03 1040</i>		<i>Fed Ex 12-18-03 1040</i>						<i>12-18-03 1040</i>	
Relinquished By/Removed From				Date/Time		Received By/Stored In					
Relinquished By/Removed From				Date/Time		Received By/Stored In					
Relinquished By/Removed From				Date/Time		Received By/Stored In					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					



Fluor Hanford, Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				Page 1 of 2	
Collector D. P. P. / P. H. / H. H.	Company Contact Steve	Telephone No. 373-5689	Project Coordinator Steve	Price Code	Data Turnaround		
Project Designation 203-LW-1 / LW-2 Charac.	Sampling Location 210-B-58 (35-37.5 ft)	SAF No. F03-025	Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 02 505	Field Logbook No. HNF-10-35601	COA 1191436510	Method of Shipment Federal Express				
Shipped To E. H. / Recra	Offsite Property No. A040 064	Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Rad Tie TO B17RWO		Preservation COOL	NOV				
Special Handling and/or Storage		Type of Container G	GIP	MAB			
		No. of Container(s) 250ml	250ml	12/1/23			
		Volume 1					
SAMPLE ANALYSIS		See item (1) special instructions	See item (2) special instructions				
Sample No.	Matrix*	Sample Date	Sample Time				
B17RVS	SOIL	12-8-03	0840	X			
CHAIN OF POSSESSION							
Relinquished By/Removed From N. P. P. / R. H. / H. H.	Date/Time 12/1/03 0300	Received By/Stored In N. P. P. / R. H. / H. H.	Date/Time 12/1/03 0830	SPECIAL INSTRUCTIONS (1) Chromium Hex - 7196; NO2 / NO3 - 353.2; Sulfides - 9030, Oil & Grease - 413.1 (2) Nickel - 63; Gamma Spec - Radium - 228, Radium - 226, Thorium - 232, Thorium - 230, Tritium - H3; Carbon - 14, Sr - 89, 90 Total Sr		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air GS=Drum Spills DL=Drum Liquids TL=Tank W=Liquid V=Vegetation X=Other	
Relinquished By/Removed From F. E. S.	Date/Time 12-18-03 1040	Received By/Stored In F. E. S.	Date/Time 12-18-03 1040				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION		Received By	Title	Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method	Disposed By	Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-006		Page 1 of 2												
Collector <i>Pope/PTES/Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (35 - 37.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest No. GAP-03-011		Field Logbook No. HNF-3561		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <i>JMS 10-29-03</i> EBERLINE SERVICES (Formerly TMA) <i>Reera</i>		Offsite Property No.		Bill of Lading/Air Bill No.																
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Rad to B7RW0</i> Special Handling and/or Storage				Preservation	Cool 4C	None														
				Type of Container	G	G/P														
				No. of Container(s)	1	1														
				Volume	250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.		<div style="text-align: center;"> <i>RP 12-2-3</i> </div>													
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RV8	SOIL	12-8-03	0840	✓																
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-90, 90 - Total Sr <div style="text-align: right;"><i>RP 12/2/3</i></div>						Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From <i>Kevin D. Hughes</i>		Date/Time <i>12-8-03</i>		Received By/Stored In <i>Site fridge RMA 26B</i>		Date/Time <i>12-8-03</i>														
Relinquished By/Removed From <i>Site fridge RMA 26B</i>		Date/Time <i>0830</i>		Received By/Stored In <i>Kevin D. Hughes</i>		Date/Time <i>0830</i>														
Relinquished By/Removed From <i>Kevin Hughes</i>		Date/Time <i>0830</i>		Received By/Stored In <i>Max Hansen</i>		Date/Time <i>12-9-03</i>														
Relinquished By/Removed From <i>Max Hansen</i>		Date/Time <i>12-9-03 1430</i>		Received By/Stored In <i>Ref #2</i>		Date/Time <i>12-9-03 1430</i>														
Relinquished By/Removed From <i>Ref #2</i>		Date/Time <i>1000</i>		Received By/Stored In <i>Max Hansen</i>		Date/Time <i>12-11-03</i>														
Relinquished By/Removed From <i>Max Hansen</i>		Date/Time <i>1010</i>		Received By/Stored In <i>Ref #2 MO-026</i>		Date/Time <i>12-11-03</i>														
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time										

A-6003-618(03/03)

003-618(03/03) Fred Go 12-18-03 1040 Vieto Hwang 12-18/03 1040

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-002		Page 1 of 1	
Collector <u>Pope / Hughes / Pfister</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (12-15-11) <u>11-13.5 ft</u>		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <u>ERC 01037</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>ASR 12/28/03</u> <u>EDERLINE SERVICES (Formerly TMA) KARA</u>		Offsite Property No. <u>RSR 185826</u>				Bill of Lading/Air Bill No. <u>N/A</u>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <u>RADIOACTIVE</u> Special Handling and/or Storage		Preservation		Cool 4C	None				
		Type of Container		G	G/P				
		No. of Container(s)		1	1				
		Volume		250mL	250mL				
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RT0	SOIL	12-6-3	10:30						
<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63 Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 - Total Sr  <u>ASR 10/28/03</u>  Personnel not available to Relinquish samples from 3728 Ref #1A on 12/17/03	
<u>Kevin Hughes</u>		<u>12-6-3 1800</u>		<u>MO 026 Fridge #2</u>		<u>12-6-3/1800</u>			
<u>NO-026 Fridge #2</u>		<u>12/8/03</u>		<u>Greg Thomas</u>		<u>12/8/03</u>			
<u>Greg Thomas</u>		<u>12/8/03</u>		<u>ASR 01/08/03 1245</u>		<u>12/8/03</u>			
<u>SJ GALEA</u>		<u>12-17-03 0930</u>		<u>FED EX</u>					
<u>FED EX</u>		<u>12-18-03 1040</u>		<u>ASR</u>		<u>12-18-03 1040</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU - HANFORD*

**Date:** *12-18-03*

**Purchase Order / Project# /** *F03-025*  
**SAF# / SOW# / Release #:**

**LvLI Batch #:** *0312L 402*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |  |   |
|---|--|---|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>FedEx</i>   | Airbill# <i>7909 9575 7916</i><br><i>8409 6234 5150</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              | <input type="checkbox"/> No Seals      Comments         |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 5. Samples received cooled or ambient?  | Temp <i>5.5°C</i>  | Cooler # <i>ERC-02-505</i><br><i>+ 01-037</i>           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              | <input type="checkbox"/> No Seals                       |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              |   |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <i>8-1-0-04</i> <input checked="" type="checkbox"/> No   | <i>Sulfide rec'd past hold</i>                          |
| 13. VOA, TOC, TOX free of headspace?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              | <input type="checkbox"/> N/A                            |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No   | <input checked="" type="checkbox"/> N/A                 |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <i>12-1-13-04</i> <input checked="" type="checkbox"/> No | <i>See #12</i>  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No   | <input checked="" type="checkbox"/> No Discrepancies    |



21 January 2004

Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352



**Subject: Contract No. 630**  
**Analytical Data Package**

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0312L369
SDG #	H2461
SAF #	F03-025
Date Received	12-15-03
# Samples	7
Matrix	Soil
Volatiles	X
Semivolatiles	
Pest/PCB	X
DRO/GRO/KRO	X
Herbicides	X
GC Alcohol	X
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

Orlette S. Johnson  
Project Manager

Lionville Laboratory, Inc.  
VOA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD F03-025, H2461

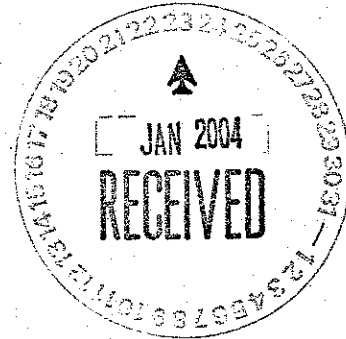
DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03LVX399	12/07/03	N/A	12/17/03
B17RT8	004 MS	S	03LVX399	12/07/03	N/A	12/17/03
B17RT8	004 MSD	S	03LVX399	12/07/03	N/A	12/17/03

LAB QC:

VBLKRJ	MB1	S	03LVX399	N/A	N/A	12/17/03
VBLKRJ	MB1 BS	S	03LVX399	N/A	N/A	12/17/03





Client: TNU-HANFORD F03-025  
LVL #: 0312L369  
SDG/SAF # H2461/F03-025

W.O. #: 11343-606-001-9999-00  
Date Received: 12-15-2003

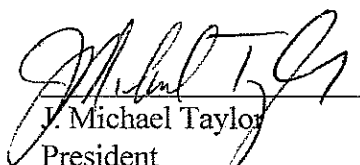
## GC/MS VOLATILE

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 12-17-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was analyzed within holding time.
3. Non-target compounds were not detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

1/15/04  
Date

son\group\data\voal\tnu-hanford\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.



## GLOSSARY

### DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.

## GLOSSARY

### ABBREVIATIONS

<b>BS</b>	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
<b>BSD</b>	=	Indicates blank spike duplicate.
<b>MS</b>	=	Indicates matrix spike.
<b>MSD</b>	=	Indicates matrix spike duplicate.
<b>DL</b>	=	Suffix added to sample number to indicate that results are from a diluted analysis.
<b>NA</b>	=	Not Applicable.
<b>DF</b>	=	Dilution Factor.
<b>NR</b>	=	Not Required.
<b>SP, Z</b>	=	Indicates Spiked Compound.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP - **Missed Peak:** Manually added peak not found by automatic quan program.
- PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.
- RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

## Volatiles by GC/MS, HSL List

Report Date: 12/19/03 15:47

Client: TNU-HANFORD F03-025, #2461 Work Order: 11343606001 Page: 1a

[illegible]

\*= Outside of EPA CLP QC limits.

Cust ID:

B17RT8

B17RT8

B17RT8

VBLKRJ

VBLKRJ BS

RFW#:

004

004 MS

004 MSD

03LVX399-MB1

03LVX399-MB1

Chlorobenzene	6 U	92 %	88 %	5 U	87 %
Ethylbenzene	6 U	5 U	6 U	5 U	5 U
Styrene	6 U	5 U	6 U	5 U	5 U
Xylene (total)	6 U	5 U	6 U	5 U	5 U

\*- Outside of EPA CLP QC limits.

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Discrepancies Between  
Samples Labels and  
COC Record? Y or N  
NOTES:

5) Received Within Holding Times

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1								
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <b>NYO 10-21-03 Recra</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPL</b>												
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C										
				Type of Container	aG	aG										
				No. of Container(s)	1	1										
				Volume	60mL	60mL										
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RY5	SOIL	12-5-3	15:00	✓	—								TIE TO	B17RY6		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
<b>Kevin DUCUES</b>		12-5-3		<b>MO-026 Fridge #1</b>		12-5-3										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>MO-026 Fridge #1</b>		12/8/03		<b>Greg Thomas / Greg Thomas</b>		12/8/03										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>Greg Thomas / Greg Thomas</b>		12/8/03		<b>DAVID J. JOHNSON</b>		12/8/03										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>SJBA (EPA) 12-12-03</b>				<b>FED EX</b>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>Fed Ex</b>		12/15/03 0950		<b>J. P. ...</b>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1												
Collector <u>POPE / PFEIFER / HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest/No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <u>TMD 10-29-03, Recra</u> EBERLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SGE 05PK</u>																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None														
				Type of Container	G	G/P														
				No. of Container(s)	1	1														
				Volume	250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.															
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RT3	SOIL	12-6-3	15:45	-																
B17RT6	SOIL	12-6-3	15:45	-																
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- 10mL Sr</p> <p>RP 12/2/3</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 11 on 12/12/03</p>						<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>						
<u>Kevin L. Hughes</u>		<u>12-6-3 1800</u>		<u>MO 026 Fridge #2</u>		<u>12-6-3 1800</u>														
<u>MO 026 Fridge #2</u>		<u>12-8-03 1230</u>		<u>Greg Thomas</u>		<u>12-8-03</u>														
<u>Greg Thomas</u>		<u>12-8-03 1245</u>		<u>David St. John</u>		<u>12-08-03 1245</u>														
<u>SGALE Milk</u>		<u>12-12-03 1000</u>		<u>FED EX</u>																
<u>FED EX</u>		<u>12-15-03 0450</u>		<u>J. Perry</u>																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time										



A-6003-618(03/03)

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1	
Collector <u>Dope / P. Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MOS 1029-02 Reera</u> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE OSPC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None		
				Type of Container		G	G/P		
				No. of Container(s)		1	1		
				Volume		250mL	250mL		
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV5	SOIL	12-7-3	14:10	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1  (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr</p> <p>Personnel not available to Relinquish samples from 3728  Ref # <u>1A</u> on <u>12/12/03</u></p>	
<u>Kevin D. Hughes</u>		16:40		<u>MO 026 Fridge #1</u>		12-7-3/16:40			
<u>MO 026 Ref #1</u>		12/8/03 1230		<u>Greg Thomas</u>		12/8/03 1230			
<u>Greg Thomas</u>		12/8/03 1245		<u>David J. Jones</u>		12/8/03 1245			
<u>216-B-58</u>		12-12-03 0930		<u>FED EX</u>					
<u>FedEx</u>		12/15/03 0950		<u>JPerry</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1	
Collector	Dade/Rhodes/Hughes		Company Contact	Telephone No.	Project Coordinator	Price Code	Data Turnaround		
			TRENT, STEVE	373-5689	TRENT, SJ	8N	45 Days		
Project Designation	200-LW-1/LW-2 Characterization - Soil		Sampling Location	216-B-58 (97.5 - 100 ft)		SAF No.	Air Quality <input type="checkbox"/>		
						F03-025			
Ice Chest No.	ERC 02 501		Field Logbook No.	COA	Method of Shipment				
			NNF 3561	119143ES10	FEDERAL EXPRESS				
Shipped To	MS 10-29-03 Vera		Offsite Property No.	A040 059		Bill of Lading/Air Bill No.			
						SEE 03PC			
POSSIBLE SAMPLE HAZARDS/REMARKS			Preservation	Cool 4C	None				
Special Handling and/or Storage			Type of Container	G	G/P				
			No. of Container(s)	1	1				
			Volume	250mL	250mL				
			SAMPLE ANALYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Cr</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 33 on 12/12/03</p> <p>RP 12/2/3</p>			
The Anderson/Maxhunen		12-10-03 1515	Fridge #1 mo-026		12-10-03 1515				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
Fridge #1 mo-026		12-11-03 1000	The Anderson/Maxhunen		12-11-03 1000				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
Maxhunen/Anderson		12-11-03 1010	REF #33 3728		12-11-03 1010				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	<p>Matrix *</p> <p>S=Soil SE=Sediment SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
REF 33 3728		12-12-03 1100	JAMES/Maxhunen		12-12-03 1100				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
JAMES/Maxhunen		12-12-03 1100	FED EX						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	<p>LABORATORY SECTION</p> <p>Received By</p> <p>Title</p> <p>Date/Time</p>			
FED EX		12/15/03 0950	JPerry						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1	
Collector <u>Dope / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No. <u>ERC 02 501</u>		Field Logbook No. <u>HNF-N-356-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>INDIO-24-03</u> <u>EDERLINE SERVICES (Formerly TMA)</u> <u>Recra</u>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>505 037C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<u>TRF TO B17RV1</u>
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) <del>Nickel-63; Gamma Spec; Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium-H3; Carbon-14; Strontium-89,90 - Total Sr</del>  Personnel not available to Relinquish samples from 3728 Ref# 1A on 12/12/03	
<u>Kevin D. Hughes</u>		16:00		<u>Site trailer RMA Frigo</u>		16:00			
<u>Site Trailer RMA Frigo</u>		12-7-3		<u>Mr. Hansen / Mr. Hansen</u>		12-9-03			
<u>Mr. Hansen / Mr. Hansen</u>		12-9-03		<u>Ref # 2</u>		12-9-03			
<u>Ref # 2</u>		12-9-03		<u>Mr. Hansen / Mr. Hansen</u>		12-11-03			
<u>Mr. Hansen / Mr. Hansen</u>		12-11-03		<u>Ref # 1A</u>		12-11-03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>Ref # 1A</u>		12-12-03		<u>Ref # 1A</u>		12-12-03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>Ref # 1A</u>		12-12-03		<u>Ref # 1A</u>		12-12-03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>Ref # 1A</u>		12-12-03		<u>Ref # 1A</u>		12-12-03			
LABORATORY SECTION		Received By				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU- HANFORD*

Date: *12-15-03*

Purchase Order / Project# /

~~SAF#~~ / SOW# / Release #: *F03-025*

LvLI Batch #:

*0312L369*

Sample Custodian:

*V-Hendy*

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped

Carrier

*Fed Ex*

Airbill#

*7923 8938 8227*

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp

*1.5 °C*

Cooler # *ERC-02-501*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☐ No

13. VOA, TOC, TOX free of headspace?

☐ Yes

☐ No

☒ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

☐ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

☒ No Discrepancies



Lionville Laboratory, Inc.  
BNA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD F03-025, H 2461

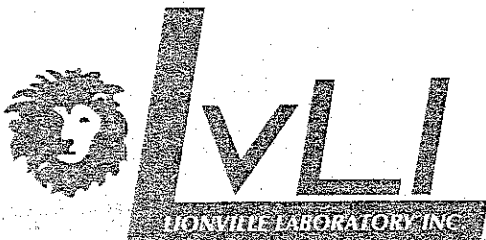
DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03LE1624	12/07/03	12/16/03	12/19/03
B17RT8	004 MS	S	03LE1624	12/07/03	12/16/03	12/19/03
B17RT8	004 MSD	S	03LE1624	12/07/03	12/16/03	12/19/03

LAB QC:

SBLKGX	MB1	S	03LE1624	N/A	12/16/03	12/19/03
SBLKGX	MB1 BS	S	03LE1624	N/A	12/16/03	12/19/03
SBLKGX	MB1 BSD	S	03LE1624	N/A	12/16/03	12/19/03



Client: TNU-HANFORD F03-025  
LVL #: 0312L369  
SDG/SAF # H2461/F03-025

W.O. #: 11343-606-001-9999-00  
Date Received: 12-15-2003

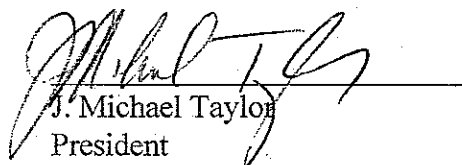
## SEMIVOLATILE

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted according to Lionville Laboratory OPs based on method 3540 on 12-16-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 12-19-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. Non-target compounds were detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. Internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

1/15/04  
Date

son\group\data\bna\tnu-hanford-0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

## GLOSSARY

### DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.



## GLOSSARY

### ABBREVIATIONS

<b>BS</b>	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
<b>BSD</b>	=	Indicates blank spike duplicate.
<b>MS</b>	=	Indicates matrix spike.
<b>MSD</b>	=	Indicates matrix spike duplicate.
<b>DL</b>	=	Suffix added to sample number to indicate that results are from a diluted analysis.
<b>NA</b>	=	Not Applicable.
<b>DF</b>	=	Dilution Factor.
<b>NR</b>	=	Not Required.
<b>SP, Z</b>	=	Indicates Spiked Compound.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP - **Missed Peak:** Manually added peak not found by automatic quan program.
- PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.
- RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 12/24/03 13:31

RFW Batch Number: 0312L369

Client: TNU-HANFORD F03-025 H 2461 Work Order: 11343606001

Page: 1a

Cust ID:		B17RT8	B17RT8	B17RT8	SBLKGX	SBLKGX BS	SBLKGX BSD
Sample Information		RFW#: 004	004 MS	004 MSD	03LE1624-MB1	03LE1624-MB1	03LE1624-MB1
		Matrix: SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		D.F.: 1.00	1.00	1.00	1.00	1.00	1.00
		Units: ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	73 %	82 %	72 %	77 %	76 %	79 %
	2-Fluorobiphenyl	70 %	78 %	75 %	75 %	75 %	77 %
	p-Terphenyl-d14	75 %	90 %	90 %	93 %	83 %	89 %
	Phenol-d5	85 %	98 %	87 %	92 %	93 %	96 %
	2-Fluorophenol	84 %	94 %	85 %	92 %	91 %	91 %
	2,4,6-Tribromophenol	67 %	81 %	78 %	72 %	73 %	80 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
	Phenol	350 U	82 %	78 %	330 U	79 %	83 %
	bis(2-Chloroethyl) ether	350 U	350 U	350 U	330 U	330 U	330 U
	2-Chlorophenol	350 U	76 %	73 %	330 U	73 %	77 %
	1,3-Dichlorobenzene	350 U	350 U	350 U	330 U	330 U	330 U
	1,4-Dichlorobenzene	350 U	69 %	63 %	330 U	67 %	68 %
	1,2-Dichlorobenzene	350 U	350 U	350 U	330 U	330 U	330 U
	2-Methylphenol	350 U	350 U	350 U	330 U	330 U	330 U
	2,2'-oxybis(1-Chloropropane)	350 U	350 U	350 U	330 U	330 U	330 U
	3- and/or 4-Methylphenol	350 U	350 U	350 U	330 U	330 U	330 U
	N-Nitroso-Di-n-propylamine	350 U	80 %	74 %	330 U	80 %	78 %
	Hexachloroethane	350 U	350 U	350 U	330 U	330 U	330 U
	Nitrobenzene	350 U	350 U	350 U	330 U	330 U	330 U
	Isophorone	350 U	350 U	350 U	330 U	330 U	330 U
	2-Nitrophenol	350 U	350 U	350 U	330 U	330 U	330 U
	2,4-Dimethylphenol	350 U	350 U	350 U	330 U	330 U	330 U
	bis(2-Chloroethoxy) methane	350 U	350 U	350 U	330 U	330 U	330 U
	2,4-Dichlorophenol	350 U	350 U	350 U	330 U	330 U	330 U
	1,2,4-Trichlorobenzene	350 U	70 %	66 %	330 U	67 %	69 %
	Naphthalene	350 U	350 U	350 U	330 U	330 U	330 U
	4-Chloroaniline	350 U	350 U	350 U	330 U	330 U	330 U
	Hexachlorobutadiene	350 U	350 U	350 U	330 U	330 U	330 U
	4-Chloro-3-methylphenol	350 U	76 %	76 %	330 U	72 %	76 %
	2-Methylnaphthalene	350 U	350 U	350 U	330 U	330 U	330 U
	Hexachlorocyclopentadiene	350 U	350 U	350 U	330 U	330 U	330 U
	2,4,6-Trichlorophenol	350 U	350 U	350 U	330 U	330 U	330 U
	2,4,5-Trichlorophenol	870 U	870 U	870 U	830 U	830 U	830 U

\*= Outside of EPA CLP QC limits.

Cust ID:

B17RT8

B17RT8

B17RT8

SBLKGX

SBLKGX BS

SBLKGX BSD

RFW#:

004

004 MS

004 MSD

03LE1624-MB1

03LE1624-MB1

03LE1624-MB1

2-Chloronaphthalene	350 U	350 U	350 U	330 U	330 U	330 U
2-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830 U
Dimethylphthalate	350 U	350 U	350 U	330 U	330 U	330 U
Acenaphthylene	350 U	350 U	350 U	330 U	330 U	330 U
2,6-Dinitrotoluene	350 U	350 U	350 U	330 U	330 U	330 U
3-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830 U
Acenaphthene	350 U	70 %	73 %	330 U	68 %	71 %
2,4-Dinitrophenol	870 U	870 U	870 U	830 U	830 U	830 U
4-Nitrophenol	870 U	66 %	68 %	830 U	66 %	66 %
Dibenzofuran	350 U	350 U	350 U	330 U	330 U	330 U
2,4-Dinitrotoluene	350 U	76 %	79 %	330 U	70 %	75 %
Diethylphthalate	350 U	350 U	350 U	330 U	330 U	330 U
4-Chlorophenyl-phenylether	350 U	350 U	350 U	330 U	330 U	330 U
Fluorene	350 U	350 U	350 U	330 U	330 U	330 U
4-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830 U
4,6-Dinitro-2-methylphenol	870 U	870 U	870 U	830 U	830 U	830 U
N-Nitrosodiphenylamine (1)	350 U	350 U	350 U	330 U	330 U	330 U
4-Bromophenyl-phenylether	350 U	350 U	350 U	330 U	330 U	330 U
Hexachlorobenzene	350 U	350 U	350 U	330 U	330 U	330 U
Pentachlorophenol	870 U	48 %	48 %	830 U	47 %	53 %
Phenanthrene	350 U	350 U	350 U	330 U	330 U	330 U
Anthracene	350 U	350 U	350 U	330 U	330 U	330 U
Carbazole	350 U	350 U	350 U	330 U	330 U	330 U
Di-n-Butylphthalate	350 U	350 U	350 U	330 U	330 U	330 U
Fluoranthene	350 U	350 U	350 U	330 U	330 U	330 U
Pyrene	350 U	77 %	83 %	330 U	72 %	78 %
Butylbenzylphthalate	350 U	350 U	350 U	330 U	330 U	330 U
3,3'-Dichlorobenzidine	350 U	350 U	350 U	330 U	330 U	330 U
Benzo(a)anthracene	350 U	350 U	350 U	330 U	330 U	330 U
Chrysene	350 U	350 U	350 U	330 U	330 U	330 U
bis(2-Ethylhexyl)phthalate	350 U	350 U	350 U	330 U	330 U	330 U
Di-n-Octyl phthalate	350 U	350 U	350 U	330 U	330 U	330 U
Benzo(b)fluoranthene	350 U	350 U	350 U	330 U	330 U	330 U
Benzo(k)fluoranthene	350 U	350 U	350 U	330 U	330 U	330 U
Benzo(a)pyrene	350 U	350 U	350 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	350 U	350 U	350 U	330 U	330 U	330 U
Dibenzo(a,h)anthracene	350 U	350 U	350 U	330 U	330 U	330 U
Benzo(g,h,i)perylene	350 U	350 U	350 U	330 U	330 U	330 U
Tributylphosphate	350 U	350 U	350 U	330 U	330 U	330 U

(1) - Cannot be separated from Diphenylamine. \*= Outside of EPA CLP QC limits.

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B17RT8

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD F03-025

Matrix: (soil/water) SOIL

Lab Sample ID: 0312L369-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C121907

Level: (low/med) LOW

Date Received: 12/15/03

% Moisture: 4 decanted: (Y/N)

Date Extracted: 12/16/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 12/19/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH:

Number TICs found: 5

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.935	100	JAB
2.	ALDOL CONDENSATE	4.368	2000	JAB
3.	ALDOL CONDENSATE	4.923	90000	JAB
4.	UNKNOWN	6.049	400	JB
5.	UNKNOWN	10.614	100	JB

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKGX

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD F03-025

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE1624-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C121904

Level: (low/med) LOW

Date Received: 12/16/03

% Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_

Date Extracted: 12/16/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 12/19/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 5

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.944	80	JA
2.	ALDOL CONDENSATE	4.326	1000	JA
3.	ALDOL CONDENSATE	4.871	70000	JA
4.	UNKNOWN	6.050	300	J
5.	UNKNOWN	10.615	70	J

9



LIONVILLE LABORATORY INC.

0312L369

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNCLHawford F03-025</u>		Refrigerator # <u>1</u>		ABC		D		E		F		G		HIJ		K		L		M	
Est. Final Proj. Sampling Date		#/Type Container		Liquid																	
Project # <u>11343-606-001-9999-03</u>		Solid		<u>3AKL</u>		<u>AGL</u>		<u>AGL</u>		<u>AGL</u>		<u>AGL</u>		<u>3AKL</u>		<u>AGL</u>		<u>1PL</u>		<u>AGL</u>	
Project Contact/Phone #		Liquid																			
Lionville Laboratory Project Manager <u>O. Johnson</u>		Solid		<u>40</u>		<u>60</u>		<u>60</u>		<u>120</u>		<u>120</u>		<u>40</u>		<u>250</u>		<u>500</u>		<u>250</u>	
QC <u>SPEC</u> Del <u>50</u> TAT <u>30 days</u>		Preservatives																			
Date Rec'd <u>12/15/03</u> Date Due <u>1-14-03</u>		ANALYSES REQUESTED		ORGANIC		VOA		BNA		Pest/POB		Herb		POBS		5000-TPH		10000-TPH		10000-TPH	
				INORG		Metal		CN		Ammonia		Ammonia									

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1									
Collector <u>POPE / PFISTER / HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>									
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>											
Ice Chest No. <u>ERC 02 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS											
Shipped To <u>NYT 10-24-03</u> EBERLINE SERVICES (Formerly TMA) <u>Recra</u>		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE OSPC</u>													
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C										
				Type of Container		aG	aG										
				No. of Container(s)		1	1										
				Volume		60mL	60mL										
SAMPLE ANALYSIS				Pesticides - 8081		Chloro- Herbicides - EPA8151											
Sample No.		Matrix *		Sample Date		Sample Time											
B17RY5		SOIL		12-5-3		15:00		✓	—					TIE TO	B17RY6		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <u>1A</u> on <u>12/12/03</u>				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drom Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
<u>Kevin DOUGHERTY</u>		<u>12-5-3 16:00</u>		<u>MO-026 Fridge #1</u>		<u>12-5-3 16:00</u>											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
<u>MO-026 Fridge #1</u>		<u>12/8/03 1230</u>		<u>Greg Thomas / Greg Thomas</u>		<u>12/8/03</u>											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
<u>Greg Thomas / Greg Thomas</u>		<u>12/8/03 1245</u>		<u>Paul S. Johnson</u>		<u>12/8/03 1245</u>											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
<u>SJGACEN</u>		<u>12-12-03</u>		<u>FED EX</u>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
<u>Fed Ex</u>		<u>12/15/03 0950</u>		<u>SPERRY</u>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
LABORATORY SECTION		Received By		Title		Date/Time											
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time											



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1	
Collector <u>POPE / PETER / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>TRD 10-29-03, Recra</u> BERKLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SEE OSLC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RT3	SOIL	12-6-3	15:45	-					TLE TO B17RT5
B17RT6	SOIL	12-6-3	15:45	-					TLE TO B17RT5
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Sr</p> <p>RP 12/2/3</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03</p>	
<u>Kevin H. [Signature]</u>		12-6-3 1800		<u>MO 026 Friday #2</u>		12-6-3 1800			
<u>MO 026 Friday #2</u>		12-8-03 1230		<u>Greg Thomas</u>		12-8-03 1230			
<u>Greg Thomas</u>		12-8-03 1245		<u>Greg Thomas</u>		12-8-03 1245			
<u>SIGALE M. [Signature]</u>		12-12-03 1000		<u>FED EX</u>					
<u>FED EX</u>		12-15-03 0950		<u>J. [Signature]</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *	
								S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
LABORATORY SECTION	Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time				

[illegible]

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1												
Collector <u>DOPE PRINCE/HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <u>MOS 1029-02 Reera</u> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE O57C</u>																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None														
				Type of Container	G	G/P														
				No. of Container(s)	1	1														
				Volume	250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.															
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RV5	SOIL	12-7-3	14:10	X																
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By/Removed From				Received By/Stored In				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03						S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drunn Solids DL=Drunn Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
Date/Time 16:40				Date/Time 12-7-3/16:40																
<u>Kevin Hughes</u>				<u>M0026 Fridge #1</u>																
Relinquished By/Removed From				Received By/Stored In																
Date/Time 1230				Date/Time 1230																
<u>M0026 Ref #1</u>				<u>Greg Thomas Aug Thomas</u>																
Relinquished By/Removed From				Received By/Stored In																
Date/Time 1245				Date/Time 1245																
<u>Greg Thomas Aug Thomas</u>				<u>David J. Jones</u>																
Relinquished By/Removed From				Received By/Stored In																
Date/Time 0930				Date/Time																
<u>SIGHEAD</u>				<u>FED EX</u>																
Relinquished By/Removed From				Received By/Stored In																
Date/Time 0950				Date/Time																
<u>Red EX</u>				<u>J. Perry</u>																
Relinquished By/Removed From				Received By/Stored In																
Date/Time				Date/Time																
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time														

ELUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1	
Collector <i>Dave P. Hedges / Hedges</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (97.5 -100 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <i>ERC 02 501</i>		Field Logbook No. <i>NLF 3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <i>MS 10-29-03 Vera</i> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040 057</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6
CHAIN OF POSSESSION				Sign/Print Names		<b>SPECIAL INSTRUCTIONS</b> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr  <i>RP 12/2/3</i>  Personnel not available to Relinquish samples from 3728 Ref # <i>38</i> on <i>12/12/03</i>			
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>Max Hansen</i>		<i>12-10-03 1515</i>	<i>Fridge #1</i>		<i>12-10-03 1515</i>				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>Fridge #1</i>		<i>12-11-03 1000</i>	<i>Max Hansen</i>		<i>12-11-03 1000</i>				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>Max Hansen</i>		<i>12-11-03 1010</i>	<i>Ref # 38</i>		<i>12-11-03 1010</i>				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>Ref 38</i>		<i>12-12-03 1100</i>	<i>WALSH</i>		<i>12-12-03 1100</i>				
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>WALSH</i>		<i>12-12-03 1100</i>	<i>FED EX</i>						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time				
<i>Reddy</i>		<i>12/15/03 0950</i>	<i>JPury</i>						
LABORATORY SECTION	Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time				

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1		
Collector <i>Jope / Phiso / Higgins</i>	Company Contact TRENT, STEVE	Telephone No. 373-5689	Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days				
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>ERC 02 501</i>	Field Logbook No. <i>HNF-12-386-1</i>	COA 119143ES10	Method of Shipment FEDERAL EXPRESS							
Shipped To <i>MD10-28-03 Recra</i> EDERLINE SERVICES (Formerly TMA)	Offsite Property No. <i>A040059</i>		Bill of Lading/Air Bill No. <i>500 03 PC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	Cool 4C	None				
Special Handling and/or Storage				Type of Container	G	G/P				
				No. of Container(s)	1	1				
				Volume	250mL	250mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
B17RV2	SOIL	12-7-3	10:30	X					<i>THE TO B17RV1</i>	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From		Sign/Print Names		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.				
<i>Karin Dux...</i>		<i>Site trailer RMA Fridge</i>		<i>12-7-3</i>		(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr <i>RP 12/2/3</i>				
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Site Trailer RMA Fridge</i>		<i>Tru Hansen / Am Hansen</i>		<i>12-9-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #2</i>		<i>12-9-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <i>1A</i> on <i>12/12/03</i>				
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						
<i>Ref #2 mo-024</i>		<i>Ref #1A 3728</i>		<i>12-11-03</i>						
Relinquished By/Removed From		Received By/Stored In		Date/Time						

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU- HANFORD*

Date: *12-15-03*

Purchase Order / Project# /  
~~SAF#~~ / SOW# / Release #: *F03-025*

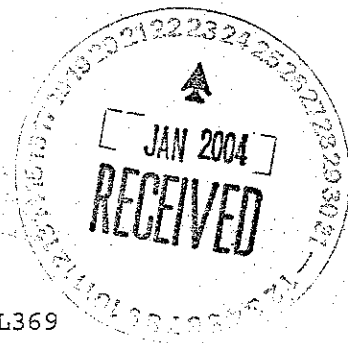
LvLI Batch #: *0312L369*

Sample Custodian: *V-Hendy*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed Ex</i>   | Airbill# <i>7923 8938 8227</i>                       |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals      Comments      |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received cooled or ambient?  | Temp <i>1.5</i> °C  | Cooler # <i>ERC-02-501</i>                           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461



DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
<b>B17RY5</b>						
% SOLIDS	001	S	03L%S192	12/05/03	12/15/03	12/16/03
% SOLIDS	001 REP	S	03L%S192	12/05/03	12/15/03	12/16/03
<b>B17RT3</b>						
% SOLIDS	002	S	03L%S192	12/06/03	12/15/03	12/16/03
CHROMIUM VI	002	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	002 REP	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	002 MS	S	03LVI086	12/06/03	12/21/03	12/21/03
CHROMIUM VI	002 MSD	S	03LVI086	12/06/03	12/21/03	12/21/03
NITRATE NITRITE	002	S	03LN3072	12/06/03	12/24/03	12/24/03
NITRATE NITRITE	002 REP	S	03LN3072	12/06/03	12/24/03	12/24/03
NITRATE NITRITE	002 MS	S	03LN3072	12/06/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	002	S	03LOG057	12/06/03	12/21/03	12/22/03
SULFIDE	002	S	03LSD059	12/06/03	12/18/03	12/18/03
<b>B17RT6</b>						
% SOLIDS	003	S	03L%S192	12/06/03	12/15/03	12/16/03
CHROMIUM VI	003	S	03LVI086	12/06/03	12/21/03	12/21/03
NITRATE NITRITE	003	S	03LN3072	12/06/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	003	S	03LOG057	12/06/03	12/21/03	12/22/03
SULFIDE	003	S	03LSD059	12/06/03	12/18/03	12/18/03
<b>B17RT8</b>						
% SOLIDS	004	S	03L%S192	12/07/03	12/15/03	12/16/03
CHLORIDE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
CHLORIDE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
CHLORIDE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
FLUORIDE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
FLUORIDE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
FLUORIDE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRITE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRITE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
TOTAL CYANIDE	004	S	03LC1C6	12/07/03	12/18/03	12/18/03
TOTAL CYANIDE	004 REP	S	03LC1C6	12/07/03	12/18/03	12/18/03
TOTAL CYANIDE	004 MS	S	03LC1C6	12/07/03	12/18/03	12/18/03
PHOSPHATE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
PHOSPHATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
PHOSPHATE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
AMMONIA	004	S	04LAM001	12/07/03	01/02/04	01/02/04
AMMONIA	004 REP	S	04LAM001	12/07/03	01/02/04	01/02/04
AMMONIA	004 MS	S	04LAM001	12/07/03	01/02/04	01/02/04
PH	004	S	03LPH113	12/07/03	12/16/03	12/16/03
PH	004 REP	S	03LPH113	12/07/03	12/16/03	12/16/03

B17RV5

% SOLIDS	005	S	03L&S192	12/07/03	12/15/03	12/16/03
CHROMIUM VI	005	S	03LVI086	12/07/03	12/21/03	12/21/03
NITRATE NITRITE	005	S	03LN3072	12/07/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	005	S	03LOG057	12/07/03	12/21/03	12/22/03
SULFIDE	005	S	03LSD059	12/07/03	12/18/03	12/18/03

B17RW4

% SOLIDS	006	S	03L&S192	12/10/03	12/15/03	12/16/03
CHROMIUM VI	006	S	03LVI086	12/10/03	12/21/03	12/21/03
NITRATE NITRITE	006	S	03LN3072	12/10/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	006	S	03LOG057	12/10/03	12/21/03	12/22/03
SULFIDE	006	S	03LSD059	12/10/03	12/18/03	12/18/03

B17RV2

% SOLIDS	007	S	03L&S192	12/07/03	12/15/03	12/16/03
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Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	007	S	03LVI086	12/07/03	12/21/03	12/21/03
NITRATE NITRITE	007	S	03LN3072	12/07/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	007	S	03LOG057	12/07/03	12/21/03	12/22/03
OIL AND GREASE BY GR	007 REP	S	03LOG057	12/07/03	12/21/03	12/22/03
OIL AND GREASE BY GR	007 MS	S	03LOG057	12/07/03	12/21/03	12/22/03
SULFIDE	007	S	03LSD059	12/07/03	12/18/03	12/18/03
SULFIDE	007 REP	S	03LSD059	12/07/03	12/18/03	12/18/03
SULFIDE	007 MS	S	03LSD059	12/07/03	12/18/03	12/18/03

LAB QC:

CHROMIUM VI	MB1	S	03LVI086	N/A	12/21/03	12/21/03
CHROMIUM VI	MB1 BS	S	03LVI086	N/A	12/21/03	12/21/03
CHROMIUM VI	MB1 BSD	S	03LVI086	N/A	12/21/03	12/21/03
NITRATE NITRITE	MB1	S	03LN3072	N/A	12/24/03	12/24/03
NITRATE NITRITE	MB1 BS	S	03LN3072	N/A	12/24/03	12/24/03
OIL & GREASE BY GRAV	MB1	S	03LOG057	N/A	12/21/03	12/22/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG057	N/A	12/21/03	12/22/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG057	N/A	12/21/03	12/22/03
SULFIDE	MB1	S	03LSD059	N/A	12/18/03	12/18/03
SULFIDE	MB1 BS	S	03LSD059	N/A	12/18/03	12/18/03
CHLORIDE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
CHLORIDE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
FLUORIDE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
FLUORIDE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
NITRITE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
NITRITE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
NITRATE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
NITRATE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
TOTAL CYANIDE	LCS L	S	03LC1C6	N/A	12/18/03	12/18/03
TOTAL CYANIDE	LCS L	S	03LC1C6	N/A	12/18/03	12/18/03
TOTAL CYANIDE	MB1	S	03LC1C6	N/A	12/18/03	12/18/03
PHOSPHATE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
PHOSPHATE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
SULFATE BY IC	MB1	S	04LCC004	N/A	01/13/04	01/13/04
SULFATE BY IC	MB1 BS	S	04LCC004	N/A	01/13/04	01/13/04
AMMONIA	MB1	S	04LAM001	N/A	01/02/04	01/02/04
AMMONIA	MB1 BS	S	04LAM001	N/A	01/02/04	01/02/04

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
AMMONIA	MB1 BSD	S	04LAM001	N/A	01/02/04	01/02/04




## Analytical Report

Client: TNU-HANFORD F03-025 H2461  
LVL#: 0312L369

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-03

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. Sample holding times as required by the method and/or contract were met with the exception of Sulfide that were received past hold (excluding sample B17RW4 that was received within hold but analyzed past hold).
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of Sulfide.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits with the exception of 03LOG0157 for Oil and Grease that were below the 80-120% control limits at 78.8% and 79.0%. The duplicate LCS for Oil and Grease and Ammonia were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike (MS) recoveries for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, Ammonia and Sulfide were within the 75-125% control limits, however MS recovery for Oil and Grease was below the control limit that may be attributed to sample inhomogeneity.
8. The replicate analyses Percent Solids, Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, Ammonia, pH, Oil and Grease and Sulfide were within the 20% RPD control limit.
9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

njpl12-369

01-20-04  
Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	— <input checked="" type="checkbox"/> D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— 9081	— c
Chromium VI		— <input checked="" type="checkbox"/> 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		— 1110(mod) 9045C	
Cyanide, Total		— <input checked="" type="checkbox"/> 9010B / 9014	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— <input checked="" type="checkbox"/> 9071A	— 413.1 (mod.)
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	— D240-87(mod)	— 5050	
Petroleum Hydrocarbons, Total Recoverable		— 9071	— EPA 418.1
pH, Soil		— <input checked="" type="checkbox"/> 9045C	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— <input checked="" type="checkbox"/> 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	
Other: Nitrate Nitrite	Method: EPA 353.2 (mod.)		
Other: Ammonia	Method: EPA 350.3 (mod.)		
Chloride, Fluoride, Nitrite Nitrate, Phosphate, Sulfate	EPA 300.0 (mod.)		

## Lionville Laboratory Incorporated

### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### ABBREVIATIONS

- MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LC = Laboratory Control Sample.  
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

## Lionville Laboratory, Inc.

## INORGANICS DATA SUMMARY REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L369

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B17RY5	% Solids	96.0	%	0.01	1.0
-002	B17RT3	% Solids	96.9	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	0.64	MG/KG	0.20	1.0
		Oil & Grease Gravimetri	688	u MG/KG	688	1.0
		Sulfide	24.8	u MG/KG	24.8	1.0
-003	B17RT6	% Solids	96.7	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	0.62	MG/KG	0.19	1.0
		Oil & Grease Gravimetri	689	u MG/KG	689	1.0
		Sulfide	29.0	u MG/KG	29.0	1.0
-004	B17RT8	% Solids	96.0	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.30	u MG/KG	1.30	1.0
		Nitrate by IC	3.57	MG/KG	1.30	1.0
		Cyanide, Total	0.34	u MG/KG	0.34	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Sulfate by IC	19.7	MG/KG	1.3	1.0
		Ammonia, as N	2.4	u MG/KG	2.4	1.0
		pH	8.7	SOIL PH	0.01	1.0
-005	B17RV5	% Solids	94.1	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	2.5	MG/KG	0.19	1.0
		Oil & Grease Gravimetri	709	u MG/KG	709	1.0
		Sulfide	30.2	u MG/KG	30.2	1.0
-006	B17RW4	% Solids	97.4	%	0.01	1.0
		Chromium VI	0.20	u MG/KG	0.20	1.0
		Nitrate Nitrite	1.6	MG/KG	0.18	1.0
		Oil & Grease Gravimetri	684	u MG/KG	684	1.0
		Sulfide	23.5	u MG/KG	23.5	1.0
-007	B17RV2	% Solids	95.9	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	1.1	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/14/04

CLIENT: TNUHANFORD P03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L369

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-007	B17RV2	Oil & Grease Gravimetri	695	u MG/KG	695	1.0
		Sulfide	20.6	u MG/KG	20.6	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/14/04

CLIENT: TNUHANFORD F03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L369

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	03LVI086-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	03LN3072-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	03LOG057-MB1	Oil & Grease Gravimetri	667	u	MG/KG	667
BLANK10	03LSD059-MB1	Sulfide	40.0 u	MG/KG	40.0	1.0
BLANK10	04LCC004-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
		Fluoride by IC	1.2 u	MG/KG	1.2	1.0
		Nitrite by IC	1.25 u	MG/KG	1.25	1.0
		Nitrate by IC	1.25 u	MG/KG	1.25	1.0
		Phosphate by IC	1.2 u	MG/KG	1.2	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	03LC1C6-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	04LAM001-MB1	Ammonia, as N	5.0 u	MG/KG	5.0	1.0



Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/14/04

CLIENT: TNUHANFORD P03-025 H2461  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L369

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-002	B17RT3	Soluble Chromium VI	3.6	0.21u	4.1	85.8	1.0
		Insoluble Chromium VI	1180	0.21u	1240	94.6	100
		Nitrate Nitrite	13.3	0.64	11.6	108.9	2.0
-004	B17RT8	Chloride by IC	28.8	1.2	26.0	106.2	1.0
		Fluoride by IC	26.5	0.41	26.0	100.3	1.0
		Nitrite by IC	26.3	1.30u	26.0	101.0	1.0
		Nitrate by IC	30.0	3.57	26.0	101.6	1.0
		Cyanide, Total	5.28	0.34u	5.52	95.6	1.0
		Phosphate by IC	26.2	1.3 u	26.0	100.6	1.0
		Sulfate by IC	47.6	19.7	26.0	107.6	1.0
		Ammonia, as N	100	2.4 u	103	97.2	1.0
-007	B17RV2	Oil & Grease Gravimetr	3940	695 u	7080	55.7	1.0
		Sulfide	205	7.7	226	87.5	1.0
BLANK10	03LVI086-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100.0	1.0
		Insoluble Chromium VI	1310	0.20u	1250	105.2	100
BLANK10	03LN3072-MB1	Nitrate Nitrite	5.1	0.20u	5.0	102.2	1.0
BLANK10	03LOG057-MB1	Oil & Grease Gravimetr	5390	667 u	6840	78.8	1.0
		Oil & Grease - Grav M	5410	667 u	6840	79.0	1.0
BLANK10	03LSD059-MB1	Sulfide	343	40.0 u	399	85.9	1.0
BLANK10	04LCC004-MB1	Chloride by IC	23.8	1.2 u	25.0	95.0	1.0
		Fluoride by IC	24.1	1.2 u	25.0	96.4	1.0
		Nitrite by IC	23.6	1.25u	25.0	94.2	1.0
		Nitrate by IC	25.1	1.25u	25.0	100.3	1.0
		Phosphate by IC	23.3	1.2 u	25.0	93.3	1.0
		Sulfate by IC	24.2	1.2 u	25.0	96.9	1.0
BLANK10	04LAM001-MB1	Ammonia, as N	206	5.0 u	200	103.2	1.0
		Ammonia, as N MSD	199	5.0 u	200	99.5	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 03121369

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		
			%RECOV	%RECOV	%DIFF
BLANK10	03LOG057-MB1	Oil & Grease - Grav	78.8	79.0	0.3
BLANK10	04LAM001-MB1	Ammonia, as N	103.2	99.5	3.7

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL	REPLICATE		DILUTION
			RESULT	RPD		FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-001REP	B17RY5	% Solids	96.0	96.1	0.010	1.0
-002REP	B17RT3	Chromium VI	0.21u	0.21u	NC	1.0
		Nitrate Nitrite	0.64	0.64	0.00	1.0
-004REP	B17RT8	Chloride by IC	1.3 u	1.3 u	NC	1.0
		Fluoride by IC	1.3 u	1.3 u	NC	1.0
		Nitrite by IC	1.30u	1.30u	NC	1.0
		Nitrate by IC	3.57	3.26	9.0	1.0
		Cyanide, Total	0.34u	0.63u	NC	1.0
		Phosphate by IC	1.3 u	1.3 u	NC	1.0
		Sulfate by IC	19.7	18.8	4.6	1.0
		Ammonia, as N	2.4 u	2.6 u	NC	1.0
		pH	8.7	8.7	0.1	1.0
-007REP	B17RV2	Oil & Grease Gravimetri	695 u	695 u	NC	1.0
		Sulfide	20.6 u	21.5 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/14/04

CLIENT: INUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
=====	=====	=====	=====	=====	=====	=====
LCSS1	03LC1C6-LCS1	Cyanide, Total LCS	1.92	2.0	MG/KG	95.8
LCSS2	03LC1C6-LCS2	Cyanide, Total LCS	9.88	10.0	MG/KG	98.8



FLUOR Hanford Inc.				CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1	
Collector <b>POPE / PFISTER / HUGHES</b>				Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil				Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <b>ERC 02 501</b>				Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <b>MO 10-24-03 Recra</b> EBERLINE SERVICES (Formerly TMA)				Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSPC</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C				
				Type of Container		aG	aG				
				No. of Container(s)		1	1				
				Volume		60mL	60mL				
SAMPLE ANALYSIS				Pesticides - 8081		Chloro- Herbicides - EPA8151					
Sample No.	Matrix *	Sample Date	Sample Time								
B17RY5	SOIL	12-5-3	15:00	✓	—					TLE TO	B17RY6
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS  Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>Kevin Hughes</i>		12-5-3 16:00		MO-026 Fridge #1		12-5-3 16:00					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
MO-026 Fridge #1		12/8/03 1230		Greg Thomas		12/8/03					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Greg Thomas		12/8/03 1245		David S. Johnson		12/8/03 1245					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *  S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other			
SOLACEA		12-12-03		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FED EX		12/15/03 0950		JPerry							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1												
Collector <u>POD/PHOTO/HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest No. <u>ERC 02-501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <u>TRD 10-29-03, Recra</u> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SGE 087C</u>																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None														
				Type of Container	G	G/P														
				No. of Container(s)	1	1														
				Volume	250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.															
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RT3	SOIL	12-6-3	15:45	-													TLE TO	B17RT5		
B17RT6	SOIL	12-6-3	15:45	-													TLE TO	B17RT5		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1  (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - 412, Carbon-14, Strontium-89, 90 - Total Sr</p> <p style="text-align: right;">RP 12/2/3</p> <p>Personnel not available to Relinquish samples from 3728  Ref # 11 on 12/12/03</p>						S=Soil SR=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
<u>Kevin H. Hughes</u>		12/6-3		<u>MO 026 Fridge #2</u>		12/6-3 1800														
<u>MO 026 Fridge #2</u>		12/8/03		<u>Greg Thomas</u>		12/8/03														
<u>Greg Thomas</u>		12/8/03		<u>David St. John</u>		12/09/03 1245														
<u>SGALE M. V. B.</u>		12/12/03 1000		<u>FGD EX</u>																
<u>FedEx</u>		12/15/03 0950		<u>JPC</u>																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time										





FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1	
Collector: <u>JOPE / PROK / HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MS 1029-02 Reera</u> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040 059</u>				Bill of Lading/Air Bill No. <u>SEE OSPC</u>			
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage			Preservation	Cool 4C	None.				
			Type of Container	G	G/P				
			No. of Container(s)	1	1				
			Volume	250mL	250mL				
SAMPLE ANALYSIS			See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV5	SOIL	12-7-3	14:10	X				TIE TO B17RV7	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03  RP 12/2/3	
<u>WIN HUGHES</u>		16:40		<u>MS 026 Fridge #1</u>		12-7-3/16:40			
<u>MO026 Ref #1</u>		12/8/03		<u>Greg Thomas</u>		12/8/03			
<u>Greg Thomas</u>		12/8/03		<u>Relinquish to JON ERC</u>		12/03/03 1245			
<u>SIGNATURE 12-12-03</u>		0930		<u>FED EX</u>					
<u>Red EX</u>		12/15/03 0950		<u>JP</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SI=Sldge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1	
Collector <i>402 Photos/Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (97.5 -100 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <i>ERC 02 501</i>		Field Logbook No. <i>NNF 3561</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <i>EVERLINE SERVICES (Formerly TMA) Pera</i>		Offsite Property No. <i>A040 059</i>		Bill of Lading/Air Bill No. <i>see ospc</i>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63; Gamma Spec - Radium (Radium-226; Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-90,90 - Total Sr</p> <p>Personnel not available to Relinquish samples from 3728 Ref # <i>3B</i> on <i>12/12/03</i></p>	
<i>Mark Hansen</i>		<i>12-10-03 1515</i>		<i>Fridge #1</i>		<i>12-10-03 1515</i>			
<i>Mark Hansen</i>		<i>12-11-03 1000</i>		<i>Mark Hansen</i>		<i>12-11-03 1000</i>			
<i>Mark Hansen</i>		<i>12-11-03 1010</i>		<i>Ref # 3B</i>		<i>3728 12-11-03 1010</i>			
<i>Ref 3B</i>		<i>3728 12-12-03 1100</i>		<i>Sigale</i>		<i>12-12-03 1100</i>			
<i>JJ Cole</i>		<i>12-12-03 1100</i>		<i>FED EX</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other</p>	
<i>Fed Ex</i>		<i>12/15/03 0950</i>		<i>HPNY</i>					
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			



**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU- HANFORD*

Date: *12-15-03*

Purchase Order / Project# /

~~SAF#~~ / SOW# / Release #: *F03-025*

LvLI Batch #:

*0312L369*

Sample Custodian:

*V-Hendy*

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped

Carrier

*Fed Ex*

Airbill#

*7923 8938 8227*

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp

*1.5 °C*

Cooler #

*ERC-02-501*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☒ No

*Sulfide past hold  
eye sample  
B17RW4*

13. VOA, TOC, TOX free of headspace?

☐ Yes

☐ No

☒ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

☐ No

*see #12*

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

☒ No

Discrepancies

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461



DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8						
SILVER, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
SILVER, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
SILVER, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL REP	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL SPIKE	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
MERCURY, TOTAL	004	S	03C0337	12/07/03	12/19/03	12/22/03
MERCURY, TOTAL	004 REP	S	03C0337	12/07/03	12/19/03	12/22/03
MERCURY, TOTAL	004 MS	S	03C0337	12/07/03	12/19/03	12/22/03
NICKEL, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
NICKEL, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
NICKEL, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
LEAD, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
LEAD, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
LEAD, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
ANTIMONY, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
ANTIMONY, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD P03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM, TOTAL	004	S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM, TOTAL	004 REP	S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM, TOTAL	004 MS	S	04L0003	12/07/03	01/05/04	01/06/04

LAB QC:

SILVER LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
SILVER, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
ARSENIC LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
ARSENIC, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
BARIUM LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
BARIUM, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
BERYLLIUM LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
BERYLLIUM, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
BISMUTH, LCS	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
BISMUTH, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
CADMIUM LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
CADMIUM, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
CHROMIUM LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
CHROMIUM, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
COPPER LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
COPPER, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
MERCURY LABORATORY	LC1 BS	S	03C0337	N/A	12/19/03	12/22/03
MERCURY, TOTAL	MB1	S	03C0337	N/A	12/19/03	12/22/03
NICKEL LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
NICKEL, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
LEAD LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
LEAD, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
ANTIMONY LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
ANTIMONY, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04
SELENIUM LABORATORY	LC1 BS	S	04L0003	N/A	01/05/04	01/06/04
SELENIUM, TOTAL	MB1	S	04L0003	N/A	01/05/04	01/06/04



## Analytical Report

**Client:** TNU-HANFORD F03-025  
**LVL#:** 0312L369  
**SDG/SAF#:** H2461/F03-025

**W.O.#:** 11343-606-001-9999-00  
**Date Received:** 12-15-03

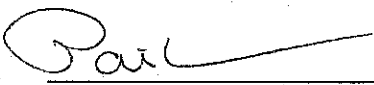
### METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 soil sample.
2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B17RT8	Chromium	200	104.3
	Lead	2200	101.0
	Antimony	100	99.3

12. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
 Iain Daniels  
 Laboratory Manager  
 Lionville Laboratory Incorporated

jjw/ml2-369

01-14-04  
 Date



# METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 03122369

Leaching Procedure: 1310 1311 1312 Other: \_\_\_\_\_

CLP Metals    Digestion and    Analysis Methods:   ILM03.0   ILM04.0

Metals Digestion Methods:   3005A   3010A   3015   3020A   3050B   3051   200.7   SS17  
Other: \_\_\_\_\_

## Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010B</u> <u>7041</u> <sup>5</sup>	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>6010B</u> <u>7060A</u> <sup>5</sup>	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010B</u> <u>7131A</u> <sup>5</sup>	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>6010B</u> <u>7191</u> <sup>5</sup>	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010B</u> <u>7211</u> <sup>5</sup>	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<u>6010B</u> <u>7421</u> <sup>5</sup>	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010B</u> <u>7430</u> <sup>4</sup>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> <sup>3</sup> <u>7471A</u> <sup>3</sup>	<u>245.1</u> <sup>2</sup> <u>245.5</u> <sup>2</sup>			<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610</u> <sup>4</sup>	<u>200.7</u> <u>258.1</u> <sup>4</sup>			<u>99</u>
Rare Earths	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Selenium	<u>6010B</u> <u>7740</u> <sup>5</sup>	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010B</u> <sup>1</sup>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010B</u> <u>7761</u> <sup>5</sup>	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010B</u> <u>7770</u> <sup>4</sup>	<u>200.7</u> <u>273.1</u> <sup>4</sup>			<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010B</u> <u>7841</u> <sup>5</sup>	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Vanadium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>

Other: \_\_\_\_\_

Method: \_\_\_\_\_

## **METHOD REFERENCES AND DATA QUALIFIERS**

### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

### **ABBREVIATIONS**

- MB = Method or Preparation Blank.
- MS = Matrix Spike.
- MSD = Matrix Spike Duplicate.
- REP = Sample Replicate.
- LCS = Laboratory Control Sample.
- NC = Not calculated.

### **ANALYTICAL METAL METHODS**

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
-004	B17RT8	Silver, Total	0.08	MG/KG	0.06	1.0
		Arsenic, Total	3.3	MG/KG	0.29	1.0
		Barium, Total	100	MG/KG	0.02	1.0
		Beryllium, Total	0.50	MG/KG	0.01	1.0
		Bismuth, Total	0.32 u	MG/KG	0.32	1.0
		Cadmium, Total	0.17	MG/KG	0.03	1.0
		Chromium, Total	9.4	MG/KG	0.07	1.0
		Copper, Total	14.4	MG/KG	0.1	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Nickel, Total	8.3	MG/KG	0.16	1.0
		Lead, Total	12.5	MG/KG	0.29	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK1	04L0003-MB1	Silver, Total	0.06 u	MG/KG	0.06	1.0
		Arsenic, Total	0.29 u	MG/KG	0.29	1.0
		Barium, Total	0.02	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Bismuth, Total	0.32 u	MG/KG	0.32	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.15	MG/KG	0.07	1.0
		Copper, Total	0.10 u	MG/KG	0.10	1.0
		Nickel, Total	0.16 u	MG/KG	0.16	1.0
		Lead, Total	0.29 u	MG/KG	0.29	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
BLANK1	03C0337-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-004	E17RT8	Silver, Total	4.8	0.08	5.1	92.5	1.0
		Arsenic, Total	187	3.3	202	90.9	1.0
		Barium, Total	271	100	202	84.6	1.0
		Beryllium, Total	5.1	0.50	5.1	90.1	1.0
		Bismuth, Total	469	0.32u	506	92.7	1.0
		Cadmium, Total	4.8	0.17	5.1	90.7	1.0
		Chromium, Total	37.4	9.4	20.2	138.6	1.0
		Copper, Total	40.9	14.4	25.3	104.7	1.0
		Mercury, Total	0.14	0.01u	0.14	102.1	1.0
		Nickel, Total	54.5	8.3	50.6	91.3	1.0
		Lead, Total	84.5	12.5	50.6	142.3	1.0
		Antimony, Total	29.0	0.27u	50.6	57.3	1.0
		Selenium, Total	176	0.32u	202	87.0	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL		DILUTION
			RESULT	REPLICATE RPD	FACTOR (REP)
=====	=====	=====	=====	=====	=====
-004REP	B17RT8	Silver, Total	0.08	0.09 6.4	1.0
		Arsenic, Total	3.3	3.0 9.5	1.0
		Barium, Total	100	79.4 23.0	1.0
		Beryllium, Total	0.50	0.54 6.2	1.0
		Bismuth, Total	0.32u	0.33u NC	1.0
		Cadmium, Total	0.17	0.09 62.1	1.0
		Chromium, Total	9.4	15.5 49.0	1.0
		Copper, Total	14.4	14.3 0.70	1.0
		Mercury, Total	0.01u	0.01u NC	1.0
		Nickel, Total	8.3	8.5 2.4	1.0
		Lead, Total	12.5	35.5 95.8	1.0
		Antimony, Total	0.27u	0.28u NC	1.0
		Selenium, Total	0.32u	0.33u NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	SPIKED UNITS	%RECOV
LCS1	04L0003-LC1	Silver, LCS	48.4	50.0	MG/KG	96.8
		Arsenic, LCS	930	1000	MG/KG	93.0
		Barium, LCS	484	500	MG/KG	96.8
		Beryllium, LCS	23.5	25.0	MG/KG	94.0
		Bismuth, LCS	477	500	MG/KG	95.5
		Cadmium, LCS	24.0	25.0	MG/KG	96.0
		Chromium, LCS	49.1	50.0	MG/KG	98.2
		Copper, LCS	121	125	MG/KG	97.1
		Nickel, LCS	192	200	MG/KG	95.9
		Lead, LCS	240	250	MG/KG	96.1
		Antimony, LCS	285	300	MG/KG	95.0
		Selenium, LCS	906	1000	MG/KG	90.6
LCS1	03C0337-LC1	Mercury, LCS	6.0	6.2	MG/KG	96.8



## FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNCL/Hanford F03-025

Est. Final Proj. Sampling Date \_\_\_\_\_

Project # 11343-606-001-9999-03

Project Contact/Phone # \_\_\_\_\_

Lionville Laboratory Project Manager O. Johnson

QC SPEC Del 5D TAT 30 days

Date Rec'd 12/15/03 Date Due 1-14-03

Refrigerator # 1

#/Type Container

Volume

Preservatives

ANALYSES REQUESTED

ORGANIC

INORG

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only															
			MS	MSD				H+290															
S - Soil	001	B17RY5			S	12/5/03	1500																
SE - Sediment	002	B17RT3				12/6/03	1545																
SO - Solid	003	B17RT6				↓	1545																
SL - Sludge	004	B17RT8				12/7/03	1030	3					1	1	3	1	1	✓					
W - Water	005	B17RV5				↓	1440																
O - Oil	006	B17RW4				12/10/03	1245																
A - Air	007	B17RV2				12/7/03	1030																
DS - Drum																							
DL - Drum																							
L - EP/CLP																							
WI - Wipe																							
X - Other																							
F - Fish																							

Special Instructions: SAF # F03-025Run Matrix QCMET ①: RCRA + Sb, Be, Bi, Cu, NiIC ①: Cl, F, NO<sub>2</sub>, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>

## DATE/REVISIONS:

(7-19-03) 1. Add 08015 to -004

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

## Lionville Laboratory Use Only

Samples were:

1) Shipped \_\_\_\_\_ or

Hand Delivered \_\_\_\_\_

Airbill # \_\_\_\_\_

2) Ambient or Chilled

3) Received in Good

Condition Y or N

4) Samples

Properly Preserved \_\_\_\_\_

5) Received Within

Holding Times \_\_\_\_\_

Y or N

Tamper Resistant Seal was:

1) Present on Outer

Package Y or N

2) Unbroken on Outer

Package Y or N

3) Present on Sample

Y or N

4) Unbroken on

Sample Y or N

COC Record Present

Upon Sample Rec't

Y or N

Cooler

Temp. \_\_\_\_\_ °C

Relinquished by	Received by	Date	Time
<u>RedEx</u>	<u>JPerry</u>	<u>12/15/03</u>	<u>0950</u>

Relinquished by	Received by	Date	Time
<u>"COMPOSITE WASTE"</u>	<u>ORIGINAL REWRITTEN</u>		

Discrepancies Between  
Samples Labels and  
COC Record? Y or N

NOTES:



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1	
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <b>MO 10-21-03 EBERLINE SERVICES (Formerly TMA) Recra</b>		Offsite Property No. <b>A040 059</b>				Bill of Lading/Air Bill No. <b>SEE OSPL</b>			
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C				
			Type of Container	aG	aG				
			No. of Container(s)	1	1				
			Volume	60mL	60mL				
SAMPLE ANALYSIS			Pesticides - 8081	Chloro- Herbicides - EPA8151					
Sample No.	Matrix *	Sample Date	Sample Time						
B17RY5	SOIL	12-5-3	15:00	✓	—			TIE TO	B17RY6
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>	
<b>Kevin DOUGHERTY</b>		12-5-3 16:00		<b>MO-026 Fridge #1</b>		12-5-3 16:00			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>MO-026 Fridge #1</b>		12/8/03 1230		<b>GREG THOMAS</b>		12/8/03 1230			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>GREG THOMAS</b>		12/8/03 1245		<b>DAVID S. JOHNSON</b>		12/8/03 1245			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<b>SJGALLEN</b>		12-12-03		<b>FED EX</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>FedEx</b>		12/15/03 0950		<b>SPERRY</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION	Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time				

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1	
Collector <u>Joe Trent/Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MD 10-29-03 Recra</u> • EDEKLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SGE 057C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None		
				Type of Container		G	G/P		
				No. of Container(s)		1	1		
				Volume		250mL	250mL		
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RT3	SOIL	12-6-3	15:45	-					TLE TO B17RT5
B17RT6	SOIL	12-6-3	15:45	-					TLE TO B17RT5
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec, Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium- H3, Carbon-14, Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # <u>11</u> on <u>12/12/03</u>	
<u>Kevin N. ...</u>		<u>12-6-3 1800</u>		<u>MO 026 Fridge #2</u>		<u>12-6-3 1800</u>			
<u>MO-026 Fridge #2</u>		<u>12/6/03</u>		<u>Greg Thomas</u>		<u>12/6/03</u>			
<u>Greg Thomas</u>		<u>12/6/03</u>		<u>David St. John</u>		<u>12/08/03 1245</u>			
<u>SGALE M...</u>		<u>12/12/03 1000</u>		<u>FED EX</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<u>FedEx</u>		<u>12/15/03 0950</u>		<u>JFCR</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>					<b>F03-025-004</b>		Page 1 of 1		
Collector <u>Bob Phister/Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <u>ERC 02501</u>		Field Logbook No. <u>HNF-N-356-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <u>TRD 10-28-03</u> <u>BERLINE SERVICES (Formerly TMA)</u> <u>Recra</u>		Offsite Property No. <u>A040 059</u>				Bill of Lading/Air Bill No. <u>SEE OSCP</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	
			Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P	
			No. of Container(s)	3	1	3	1	1	1	1	
			Volume	40mL	120mL	40mL	120mL	250mL	500mL	500mL	
SAMPLE ANALYSIS			VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B17RT8	SOIL	12-7-03	10:30	✓	—	—	—	—	—	T1670 B17RV1	
<div style="display: flex; justify-content: space-between;"> <div> <p>Personnel not available to relinquish samples from 3728</p> <p>Ref # <u>1A</u> on <u>12/12/03</u></p> </div> </div>											
<b>CHAIN OF POSSESSION</b>			<b>Sign/Print Names</b>			<b>SPECIAL INSTRUCTIONS</b>					
Relinquished By/Removed From			Date/Time <u>1600</u>			Received By/Stored In					
<u>John A. ...</u>			<u>12-7-03</u>			<u>Site trailer RMA Fridge 12-7-03</u>					
Relinquished By/Removed From			Date/Time <u>1230</u>			Received By/Stored In					
<u>Site Trailer RMA Fridge 12-9-03</u>			<u>12-9-03</u>			<u>Therese ... 12-9-03</u>					
Relinquished By/Removed From			Date/Time <u>1230</u>			Received By/Stored In					
<u>Therese ... 12-9-03</u>			<u>12-9-03</u>			<u>Ref # 2 12-9-03 1430</u>					
Relinquished By/Removed From			Date/Time <u>1000</u>			Received By/Stored In					
<u>Ref # 2 MO-026 D11-03</u>			<u>11-03</u>			<u>Therese ... 11-03</u>					
Relinquished By/Removed From			Date/Time <u>1100</u>			Received By/Stored In					
<u>Therese ... 11-03</u>			<u>11-03</u>			<u>Ref # 1A 3728 12-11-03 1010</u>					
Relinquished By/Removed From			Date/Time <u>1100</u>			Received By/Stored In					
<u>Therese ... 12-12-03</u>			<u>12-12-03</u>			<u>Ref # 1A 3728 12-12-03 1100</u>					
Relinquished By/Removed From			Date/Time <u>1100</u>			Received By/Stored In					
<u>Therese ... 12-12-03</u>			<u>12-12-03</u>			<u>Ref # 1A 3728 12-12-03 1100</u>					
LABORATORY SECTION		Received By		Title		Date/Time					
		<u>Rel. by: FedEx 12/15/03 0950</u>		<u>Rec by: J Perry</u>							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1	
Collector <b>DOPE PRISKE/HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <b>ERC 02501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <b>MS 1029-02 Reera</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE OSCP</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV5	SOIL	12-7-3	14:10	X				TIE TO B17RV7	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232), Tritium - H15; Carbon-14; Strontium-89,90 - Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03  RP 12/2/3	
<b>Kevin Hughes</b>		12/7/03 16:40		<b>ms 026 Fridge #1</b>		12-7-3/16:40			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>MOORE Ref #1</b>		12/8/03 1230		<b>Greg Thomas</b>		12/8/03 1230			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Greg Thomas</b>		12/8/03 1245		<b>Greg Thomas</b>		12/8/03 1245			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>SIGHEAL</b>		12-12-03 0930		<b>FED EX</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Fred EX</b>		12/15/03 0950		<b>JP</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION	Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time				

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1	
Collector <u>Dave Probst / Archibald</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (97.5 -100 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>JRC 02 501</u>		Field Logbook No. <u>NLF 3561</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>TMS 10-29-03 Pera</u> BERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A040 057</u>		Bill of Lading/Air Bill No. <u>SEE 03PC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions. <u>12-23</u>				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-90,90 - Total Sr</p> <p>Personnel not available to Relinquish samples from 3728 Ref # <u>38</u> on <u>12/12/03</u></p> <p style="text-align: right;"><u>RP 12/2/3</u></p>	
<u>Matthewn / Archibald</u>		<u>12-10-03 1515</u>		<u>FRIDG #1 MO-026</u>		<u>12-10-03 1515</u>			
<u>FRIDG #1 MO-026</u>		<u>12-11-03 1000</u>		<u>Matthewn / Archibald</u>		<u>12-11-03 1000</u>			
<u>Matthewn / Archibald</u>		<u>12-11-03 1010</u>		<u>REF # 38 3728</u>		<u>12-11-03 1010</u>			
<u>REF 38 3728</u>		<u>12-12-03 1100</u>		<u>WALSH / Archibald</u>		<u>12-12-03 1100</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Personnel not available to Relinquish samples from 3728 Ref # <u>38</u> on <u>12/12/03</u></p>	
<u>SJ Carlisle / Archibald</u>		<u>12-12-03 1100</u>		<u>FED EX</u>		<u>12-12-03 1100</u>			
<u>Fed Ex</u>		<u>12/15/03 0950</u>		<u>J Perry</u>		<u>12/15/03 0950</u>			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1			
Collector <i>Jode / Pisto / Hughes</i>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days			
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>ERC 02 501</i>		Field Logbook No. <i>HMF-D-386-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <i>MSIO-28-03 Recra</i> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <i>A040 059</i>		Bill of Lading/Air Bill No. <i>588 03 PC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None					
				Type of Container	G	G/P					
				No. of Container(s)	1	1					
				Volume	250mL	250mL					
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.						
Sample No.	Matrix *	Sample Date	Sample Time								
B17RV2	SOIL	<i>12-7-3</i>	<i>10:30</i>	<i>X</i>					<i>THE TO B17RV1</i>		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>Rex N. D. ...</i> Date/Time <i>16:00</i> <i>Site Trailer RMA Fringe 12-7-3</i> Relinquished By/Removed From <i>Site Trailer RMA Fringe 12-9-03</i> Date/Time <i>1230</i> <i>Tru Hansen / Tru Hansen 12-9-03</i> Relinquished By/Removed From <i>Tru Hansen / Tru Hansen 12-9-03</i> Date/Time <i>1430</i> <i>Ref # 2 12-9-03 1430</i> Relinquished By/Removed From <i>Ref # 2 12-9-03 1430</i> Date/Time <i>1000</i> <i>Tru Hansen / Tru Hansen 12-11-03</i> Relinquished By/Removed From <i>Ref # 2 12-11-03</i> Date/Time <i>1000</i> <i>Tru Hansen / Tru Hansen 12-11-03</i> Relinquished By/Removed From <i>Ref # 1A 3728 12-11-03</i> Date/Time <i>1010</i> <i>Tru Hansen / Tru Hansen 12-11-03</i> Relinquished By/Removed From <i>Ref # 1A 3728 12-12-03</i> Date/Time <i>1100</i> <i>Tru Hansen / Tru Hansen 12-12-03</i>				Received By/Stored In <i>Site Trailer RMA Fringe 12-7-3</i> Date/Time <i>1600</i> Received By/Stored In <i>Tru Hansen / Tru Hansen 12-9-03</i> Date/Time <i>1230</i> Received By/Stored In <i>Ref # 2 12-9-03 1430</i> Date/Time <i>1000</i> Received By/Stored In <i>Ref # 2 12-9-03 1430</i> Date/Time <i>1000</i> Received By/Stored In <i>Ref # 1A 3728 12-11-03</i> Date/Time <i>1010</i> Received By/Stored In <i>Ref # 1A 3728 12-12-03 1100</i> Date/Time <i>1100</i> <i>FED EX</i>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232), Tritium-3H; Carbon-14; Strontium-89,90 -- Total Sr  <i>RP 12/2/3</i>		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other	
LABORATORY SECTION				Received By <i>Rel. by: FedEx 12/15/03 0950 Rec. by: J. Perry</i>				Date/Time			
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU - HANFORD*

**Date:** *12-15-03*

**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** *F03-025*

**LvLI Batch #:** *0312L369*

**Sample Custodian:** *[Signature]*

**NOTE: EXPLAIN ALL DISCREPANCIES**

1. Samples Hand Delivered or Shipped

Carrier *Fed E*

Airbill# *7923 8938 8227*

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp *1.5* °C

Cooler # *ERC-02-501*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☐ No

13. VOA, TOC, TOX free of headspace?

☐ Yes

☐ No

☒ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

☐ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

☒ No Discrepancies



Lionville Laboratory, Inc.  
PEST/PCB ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

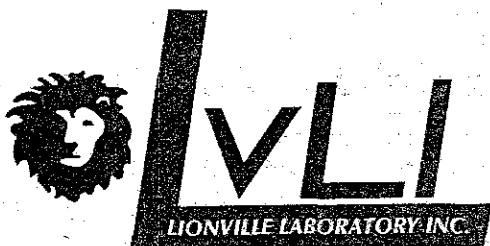
CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RY5	001	S	03LE1625	12/05/03	12/16/03	12/30/03
B17RY5	001 MS	S	03LE1625	12/05/03	12/16/03	12/30/03
B17RY5	001 MSD	S	03LE1625	12/05/03	12/16/03	12/30/03

LAB QC:

PBLKTB	MB1	S	03LE1625	N/A	12/16/03	12/30/03
PBLKTB	MB1 BS	S	03LE1625	N/A	12/16/03	12/30/03

*Handwritten signature/initials*





## Analytical Report

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00

Date Received: 12-15-2003

### CHLORINATED PESTICIDES

One (1) soil sample was collected on 12-05-2003.

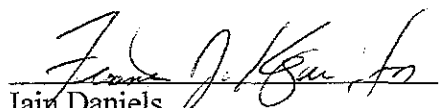
The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-30-2003. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

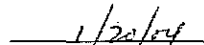
The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. Two (2) of twenty (20) blank spike recoveries were outside acceptance criteria.

Four (4) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

son\tr\group\data\pest\tnu hanford\0312-369.pes

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 046022

Initiator: DJH/BLK  
Date: 1/15/04  
Client: TNU

Batch: 032L, 369, 389, 424  
Samples: MS/MSD and BS  
Method: SW846/MCAWW/CLP/

Parameter: CLASH  
Matrix: Water  
Prep Batch: 03E1625, 03E1671

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other \_\_\_\_\_

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

## c. Problem (Include all relevant specific results; attach data if necessary)

Recoveries out of 70-130%  
Default limits 03E1625-BS compounds AID in 60%, DDD-65%, GU AID 50%  
369-1ms AND AID 60%, Alpha chlc 65%, 5msD END AID 65%  
03E1671-BS Delta BHC 60%, 389-1ms Delta BHC 55%, 1msD - Delta BHC 45%  
039-1msD cont - endo II 60%, endo S 40%, EK 50%, EA 30%  
will narrate

## 2. Known or Probable Causes(s)

LAB currently establishing in house control limits.

## 3. Discussion and Proposed Action

Other Description:

☐ Re-log  
☐ Entire Batch  
☐ Following Samples: \_\_\_\_\_  
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to \_\_\_\_\_  
☐ Place On/Take Off Hold (circle)

narrate

## 4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☐ Include in Case Narrative  
☐ Client Contacted:  
Date/Person \_\_\_\_\_  
☐ Add  
☐ Cancel

*[Signature]* 1/15/04

## 5. Final Action...signature/date:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)  
☒ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR  
☐ X Initiator  
☐ X Lab General Manager: M. Taylor  
☒ X Project Mgr: Stone/Johnson/Haslett  
☐ X Technical Mgr: Wesson/Daniels  
☐ X QA (file): Alberts  
☐ Data Management: Feldman  
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR  
☐ Metals: Beegle  
☐ Inorganic: Perrone  
☒ GC/LC: Kiger  
☐ MS: Rychlak/Layman  
☐ Log-in: Melnic  
☐ Admin: Soos  
☐ Other: \_\_\_\_\_



## GLOSSARY OF PESTICIDE/PCB DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.
- .I** = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.

SP = Indicates Spiked Compound.



## GLOSSARY OF PESTICIDE/PCB DATA

- P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

## Pesticide/PCBs by GC, CLP List

2

Client: TNUHANFORD F03-025 H2461

Work Order: 11343-606-001-9999-00

Page: 1

2011/15/14

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of Advisory limits.

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

<p><b>Special Instructions:</b>     <i>SAF # F03-025</i></p> <p style="margin-left: 40px;"><i>Run Matrix Qc</i></p> <p><i>MET ①: ACRA + Sb, Be, Bi, Cu, Ni</i></p> <p><i>IC ①: Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub></i></p>	<p><b>DATE/REVISIONS:</b></p> <p><i>(7-19-03) 1. Add 08015 to -004</i></p> <p>_____ 2. _____</p> <p>_____ 3. _____</p> <p>_____ 4. _____</p> <p>_____ 5. _____</p> <p>_____ 6. _____</p>	<p style="text-align: center;"><b>Lionville Laboratory Use Only</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Samples were:</p> <p>1) Shipped _____ or _____</p> <p>Hand Delivered _____</p> <p>Airbill # _____</p> <p>2) Ambient or Chilled _____</p> <p>3) Received in Good Condition Y or N _____</p> <p>4) Samples Properly Preserved _____ or N</p> <p>5) Received Within Holding Times _____ Y or N</p> </div> <div style="width: 45%;"> <p>Tamper Resistant Seal was:</p> <p>1) Present on Outer Package Y or N _____</p> <p>2) Unbroken on Outer Package Y or N _____</p> <p>3) Present on Sample Y or N _____</p> <p>4) Unbroken on Sample Y or N _____</p> <p>COC Record Present Upon Sample Rec't Y or N _____</p> <p>Cooler Temp. _____ °C</p> </div> </div>
--	--	--

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	<p>Discrepancies Between Samples Labels and COC Record? Y or N</p> <p>NOTES:</p>
<i>FedEx</i>	<i>JPerny</i>	<i>12/5/03</i>	<i>0950</i>	<b>"COMPOSITE WASTE"</b>	<b>ORIGINAL REWRITTEN</b>			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1								
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <b>MO 10-21-03 Recra</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>				Bill of Lading/Air Bill No. <b>SEE OSLC</b>										
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C										
				Type of Container	aG	aG										
				No. of Container(s)	1	1										
				Volume	60mL	60mL										
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RY5	SOIL	12-5-3	15:00	✓	—							TIE TO B17RY6				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Kevin DUGUES 12-5-3		16:00		MO-026 Fridge #1 12-5-3		16:00										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
MO-026 Fridge #1 12/8/03		1230		Greg Thomas Greg Thomas 12/8/03		1230										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Greg Thomas Greg Thomas 12/8/03		1245		David S. Johnson 12/8/03		1245										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
S. D. GALE 12-12-03		12:12-03		FED EX												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
FED EX 12/15/03 0950		0950		SPERRY												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-003</b>		Page 1 of 1													
Collector <b>POPE / PROCTOR / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>													
Ice Chest No. <b>ERC 02 - 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <b>TRD 10-29-03 Recra</b> EBERLINE SERVICES (formerly TMA)		Offsite Property No. <b>A040059</b>		Bill of Lading/Air Bill No. <b>SGE 057C</b>																	
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None														
				Type of Container		G	G/P														
				No. of Container(s)		1	1														
				Volume		250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.															
Sample No.		Matrix *		Sample Date		Sample Time															
B17RT3		SOIL		12-6-3		15:45		-													
B17RT6		SOIL		12-6-3		15:45		-													
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>						<b>Matrix *</b>							
Relinquished By/Removed From <b>Kevin N. [Signature]</b>				Received By/Stored In <b>MO 026 Fridge #2</b>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium - 113, Carbon-14, Strontium-89,90 - Total Sr  <b>RP 12/2/3</b>  Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>						S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other							
Date/Time <b>12-6-3 1800</b>				Date/Time <b>12-6-3 1800</b>																	
Relinquished By/Removed From <b>MO 026 Fridge #2</b>				Received By/Stored In <b>Greg Thomas</b>																	
Date/Time <b>12/8/03</b>				Date/Time <b>12/8/03</b>																	
Relinquished By/Removed From <b>Greg Thomas</b>				Received By/Stored In <b>David St. John</b>																	
Date/Time <b>12/8/03</b>				Date/Time <b>12/8/03 1245</b>																	
Relinquished By/Removed From <b>Greg Thomas</b>				Received By/Stored In <b>FGD EX</b>																	
Date/Time <b>12/12/03 1000</b>				Date/Time <b>12/12/03 1245</b>																	
Relinquished By/Removed From <b>FGD EX</b>				Received By/Stored In <b>J Peruy</b>																	
Date/Time <b>12/15/03 0950</b>				Date/Time																	
Relinquished By/Removed From				Received By/Stored In																	
Date/Time				Date/Time																	
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time															
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By						Date/Time											



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-004		Page 1 of 1		
Collector <i>Bob Pfeister/Hughes</i>	Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days		
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>				
Ice Chest No. <i>ERC 02501</i>		Field Logbook No. <i>HMF-N-356-1</i>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS				
Shipped To <i>THIS 10-28-03</i> <del>EDERLINE SERVICES (Formerly TMA)</del> <i>Beera</i>		Offsite Property No. <i>A040 059</i>				Bill of Lading/Air Bill No. <i>SEE 08PC</i>				
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	
		Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P	
		No. of Container(s)	3	1	3	1	1	1	1	
		Volume	40mL	120mL	40mL	120mL	250mL	500mL	500mL	
SAMPLE ANALYSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time							
B17RT8	SOIL	12-7-03	10:30						T1670 B17RV1	
				Personnel not available to relinquish samples from 3728 Ref # <i>1A</i> on <i>12/12/03</i>						
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-7-03</i>		Received By/Stored In <i>Site Trailer RMA Fridge</i>		Date/Time <i>12-7-03</i>		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Semi-VOA - 8270A (TCL) (Phenol); Semi-VOA - 8270A (Add-On) (Tributyl phosphate); TPH - Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G (2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Antimony, Beryllium, Bismuth, Copper, Nickel); Mercury - 7471 - (CV) (3) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Ammonia - 350.3; Total Cyanide - 9010; pH (Soil) - 9045 <del>(4) ...</del> <del>(5) ...</del> <del>(6) ...</del> <del>(7) ...</del> <del>(8) ...</del> <del>(9) ...</del> <del>(10) ...</del> <del>(11) ...</del> <del>(12) ...</del> <del>(13) ...</del> <del>(14) ...</del> <del>(15) ...</del> <del>(16) ...</del> <del>(17) ...</del> <del>(18) ...</del> <del>(19) ...</del> <del>(20) ...</del> <del>(21) ...</del> <del>(22) ...</del> <del>(23) ...</del> <del>(24) ...</del> <del>(25) ...</del> <del>(26) ...</del> <del>(27) ...</del> <del>(28) ...</del> <del>(29) ...</del> <del>(30) ...</del> <del>(31) ...</del> <del>(32) ...</del> <del>(33) ...</del> <del>(34) ...</del> <del>(35) ...</del> <del>(36) ...</del> <del>(37) ...</del> <del>(38) ...</del> <del>(39) ...</del> <del>(40) ...</del> <del>(41) ...</del> <del>(42) ...</del> <del>(43) ...</del> <del>(44) ...</del> <del>(45) ...</del> <del>(46) ...</del> <del>(47) ...</del> <del>(48) ...</del> <del>(49) ...</del> <del>(50) ...</del> <del>(51) ...</del> <del>(52) ...</del> <del>(53) ...</del> <del>(54) ...</del> <del>(55) ...</del> <del>(56) ...</del> <del>(57) ...</del> <del>(58) ...</del> <del>(59) ...</del> <del>(60) ...</del> <del>(61) ...</del> <del>(62) ...</del> <del>(63) ...</del> <del>(64) ...</del> <del>(65) ...</del> <del>(66) ...</del> <del>(67) ...</del> <del>(68) ...</del> <del>(69) ...</del> <del>(70) ...</del> <del>(71) ...</del> <del>(72) ...</del> <del>(73) ...</del> <del>(74) ...</del> <del>(75) ...</del> <del>(76) ...</del> <del>(77) ...</del> <del>(78) ...</del> <del>(79) ...</del> <del>(80) ...</del> <del>(81) ...</del> <del>(82) ...</del> <del>(83) ...</del> <del>(84) ...</del> <del>(85) ...</del> <del>(86) ...</del> <del>(87) ...</del> <del>(88) ...</del> <del>(89) ...</del> <del>(90) ...</del> <del>(91) ...</del> <del>(92) ...</del> <del>(93) ...</del> <del>(94) ...</del> <del>(95) ...</del> <del>(96) ...</del> <del>(97) ...</del> <del>(98) ...</del> <del>(99) ...</del> <del>(100) ...</del>		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-9-03</i>		Received By/Stored In <i>Tracharsen/Tracharsen</i>		Date/Time <i>12-9-03</i>				
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-9-03</i>		Received By/Stored In <i>Ref #2</i>		Date/Time <i>12-9-03</i>				
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-11-03</i>		Received By/Stored In <i>Tracharsen/Tracharsen</i>		Date/Time <i>12-11-03</i>				
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-11-03</i>		Received By/Stored In <i>Ref #1A 3728</i>		Date/Time <i>12-11-03</i>				
Relinquished By/Removed From <i>Handwritten signature</i>		Date/Time <i>12-12-03</i>		Received By/Stored In <i>Site Trailer RMA Fridge</i>		Date/Time <i>12-12-03</i>				
LABORATORY SECTION	Received By <i>Rel. by: FedEx</i>		Date/Time <i>12/15/03 0950</i>		Title <i>JPerry</i>		Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1		
Collector	Dore P. P. / P. P. / P. P.		Company Contact	Telephone No.	Project Coordinator	Price Code		Data Turnaround		
Project Designation		Sampling Location		SAF No.		Air Quality		45 Days		
200-LW-1/LW-2 Characterization - Soil		216-B-58 (97.5 -100 ft)		F03-025		<input type="checkbox"/>				
Ice Chest No.	Field Logbook No.		COA		Method of Shipment					
ERC 02 501	NNF 3561		119143ES10		FEDERAL EXPRESS					
Shipped To	Offsite Property No.		Bill of Lading/Air Bill No.							
BERLINE SERVICES (Formerly TMA)		A-040 059		SEE 03PC						
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	Cool 4C	None				
Special Handling and/or Storage				Type of Container	G	G/P				
				No. of Container(s)	1	1				
				Volume	250mL	250mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
B17RW4	SOIL	12-10-03	1245	X					TIE TO B17RW6	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr</p> <p>Personnel not available to Relinquish samples from 3728 Ref # 33 on 12/12/03</p>		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1													
Collector <u>Dope / P. H. Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <u>MS 1029-02 Recra</u> BERLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE O57C</u>																	
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None														
				Type of Container		G	G/P														
				No. of Container(s)		1	1														
				Volume		250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.															
Sample No.		Matrix *		Sample Date		Sample Time															
B17RV5		SOIL		12-7-3		14:10		TIE TO B17RV7													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-220, Radium-226), Technetium-99; Isotopic Thorium (Thorium-232), Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03						S=Soil SE=Solid SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other							
<u>Kevin Hughes</u>		16:40		<u>MO026 Fridge #1</u>		12-7-3/16:40															
<u>MO026 Ref #1</u>		12/8/03		<u>Greg Thomas</u>		12/8/03															
<u>Greg Thomas</u>		12/8/03		<u>Greg Thomas</u>		12/8/03															
<u>SIGAL</u>		12-12-03 0930		<u>FED EX</u>																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>Red EX</u>		12/15/03 0950		<u>JPerry</u>																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
LABORATORY SECTION		Received By				Title				Date/Time											
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time											

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-044</b>		Page 1 of 1	
Collector <u>Jope / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02 501</u>		Field Logbook No. <u>HNF-12-306-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MSIO-24-03 Recra</u> <del>EDERLINE SERVICES (Formerly TMA)</del>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>500 03 PC</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
				<u>RP 12/2/3</u>					
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<u>REF TO B17RV1</u>
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>	
Relinquished By/Removed From <u>Karin D. Hughes</u>		Date/Time <u>12-7-03</u>		Received By/Stored In <u>Site Trailer RMA Fridge</u>		Date/Time <u>12-7-03</u>		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  <u>RP 12/2/3</u>	
Relinquished By/Removed From <u>Site Trailer RMA Fridge</u>		Date/Time <u>12-9-03</u>		Received By/Stored In <u>Mr. Hansen / Mr. Hansen</u>		Date/Time <u>12-9-03</u>			
Relinquished By/Removed From <u>Mr. Hansen / Mr. Hansen</u>		Date/Time <u>12-9-03</u>		Received By/Stored In <u>Ref # 2</u>		Date/Time <u>12-9-03</u>			
Relinquished By/Removed From <u>Ref # 2</u>		Date/Time <u>12-11-03</u>		Received By/Stored In <u>Mr. Hansen / Mr. Hansen</u>		Date/Time <u>12-11-03</u>			
Relinquished By/Removed From <u>Mr. Hansen / Mr. Hansen</u>		Date/Time <u>12-11-03</u>		Received By/Stored In <u>Ref # 1A</u>		Date/Time <u>12-11-03</u>			
Relinquished By/Removed From <u>Ref # 1A</u>		Date/Time <u>12-12-03</u>		Received By/Stored In <u>Ref # 1A</u>		Date/Time <u>12-12-03</u>			
<b>LABORATORY SECTION</b>				<b>Disposal Method</b>				<b>Disposal By</b>	
Received By <u>Rel. by: Fed Ex</u>				Date/Time <u>12/15/03 0950</u>				Disposed By <u>J. Perry</u>	
<b>FINAL SAMPLE DISPOSITION</b>									

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU- HANFORD*

Date: *12-15-03*

Purchase Order / Project# /

SAF# / SOW# / Release #: *F03-025*

LvLI Batch #:

*0312L 369*

Sample Custodian:

*[Signature]*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or Shipped  | Carrier <i>Fed Ex</i>   | Airbill# <i>7923 8938 8227</i>                       |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals      Comments      |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received cooled or ambient?  | Temp <i>1.5</i> °C  | Cooler # <i>ERC-02-501</i>                           |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |



Lionville Laboratory, Inc.  
PCB ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

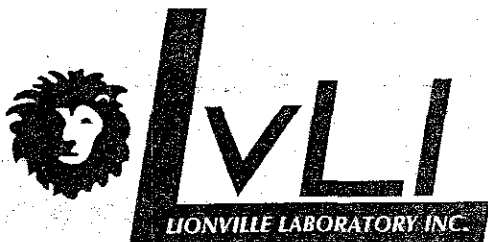
LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8	004	S	03LE1626	12/07/03	12/16/03	01/10/04
B17RT8	004 MS	S	03LE1626	12/07/03	12/16/03	01/10/04
B17RT8	004 MSD	S	03LE1626	12/07/03	12/16/03	01/10/04

LAB QC:

PBLKTC	MB1	S	03LE1626	N/A	12/16/03	01/10/04
PBLKTC	MB1 BS	S	03LE1626	N/A	12/16/03	01/10/04

*Handwritten signature/initials*



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003

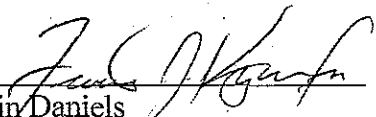
### PCB

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 01-10-2004. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recoveries were within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. Confirmation was not required because target compounds were not detected in the sample.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

  
Date

son\lr\group\data\pest\tnu hanford\0312-369.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.



## GLOSSARY OF PESTICIDE/PCB DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.
- .I** = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.



SP = Indicates Spiked Compound.



### GLOSSARY OF PESTICIDE/PCB DATA

- P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

## Lionville Laboratory, Inc.

PCBs by GC

Report Date: 01/15/04 14:58

RFW Batch Number: 0312L369

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	B17RT8	B17RT8	B17RT8	PBLKTC	PBLKTC BS
	RFW#:	004	004 MS	004 MSD	03LE1626-MB1	03LE1626-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	75 %	90 %	100 %	85 %	70 %
	Tetrachloro-m-xylene	70 %	80 %	90 %	75 %	60 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====						
Aroclor-1016		14 U	90 %	99 %	13 U	73 %
Aroclor-1221		14 U	14 U	14 U	13 U	13 U
Aroclor-1232		14 U	14 U	14 U	13 U	13 U
Aroclor-1242		14 U	14 U	14 U	13 U	13 U
Aroclor-1248		14 U	14 U	14 U	13 U	13 U
Aroclor-1254		14 U	14 U	14 U	13 U	13 U
Aroclor-1260		14 U	89 %	97 %	13 U	68 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*Rs. 1/15/04*

Lionville Laboratory Use Only

0312L369

## Custody Transfer Record/Lab Work Request Page 1 of 1



Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

				FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS																	
				<div style="display: flex; justify-content: space-between;"> <span>ABC</span> <span>D E F G H I J</span> <span>K L</span> <span>M</span> </div>																	
Client <u>TNU/Hanford F03-025</u>				Refrigerator #		<div style="display: flex; justify-content: space-between;"> <span>1</span> <span>6 6 6 6 1 6 6</span> <span></span> <span>6</span> </div>															
Est. Final Proj. Sampling Date _____				#/Type Container		<div style="display: flex; justify-content: space-between;"> <span>Liquid</span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> </div>															
Project # <u>11343-606-001-9999-00</u>						<div style="display: flex; justify-content: space-between;"> <span>Solid</span> <span>3AKL</span> <span>AGL</span> <span>AGL</span> <span>AGL</span> <span>AGL</span> <span>3AKL</span> <span>AGL</span> <span>1PL</span> <span>AGL</span> <span>1</span> <span></span> <span>AGL</span> <span>1</span> </div>															
Project Contact/Phone # _____				Volume		<div style="display: flex; justify-content: space-between;"> <span>Liquid</span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> <span></span> </div>															
Lionville Laboratory Project Manager <u>D. Johnson</u>						<div style="display: flex; justify-content: space-between;"> <span>Solid</span> <span>40</span> <span>60</span> <span>60</span> <span>120</span> <span>120</span> <span>40</span> <span>250</span> <span>500</span> <span>1</span> <span></span> <span>250</span> <span>1</span> </div>															
QC <u>Spec</u> Del <u>5D</u> TAT <u>30 days</u>				Preservatives																	
Date Rec'd <u>12/15/03</u> Date Due <u>1-14-03</u>				ANALYSES REQUESTED →		<div style="display: flex; justify-content: space-between;"> <div>ORGANIC</div> <div>INORG</div> </div>															
						<div style="display: flex; justify-content: space-between;"> <div> VOA BNA Pest/FOB Herb PCBs SVOCs TPH Alcohols Glycols Ketones </div> <div> Metal CN </div> <div> Ammonia Arsenic </div> <div> Cr6 Ni6 Pb6 Sulfides Oil/Grease </div> </div>															
						Lionville Laboratory Use Only															
						<div style="display: flex; justify-content: space-between;"> <div>0624H 0606H 0H36X 0PCB 0625X 0600 06015 0605C METO ICNTO IAHN IAH ICD</div> <div>ICRG IN3L ISFD ICGR</div> </div>															
MATRIX CODES:				Matrix																	
S - Soil				Date Collected																	
SE - Sediment				Time Collected																	
SO - Solid																					
SL - Sludge																					
W - Water																					
O - Oil																					
A - Air																					
DS - Drum																					
Solids																					
DL - Drum																					
Liquids																					
L - EP/TCLP																					
Leachate																					
WI - Wipe																					
X - Other																					
F - Fish																					

Special Instructions: SAF # F03-025Run Matrix QCMET ①: RCRA + Sb, Be, Bi, Cu, NiIC ①: Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

DATE/REVISIONS:

(2-19-03) 1. Add 08015 to -004

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

Lionville Laboratory Use Only

Samples were:

 1) Shipped \_\_\_\_\_ or  
 Hand Delivered \_\_\_\_\_  
 Airbill # \_\_\_\_\_

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was:

1) Present on Outer Package Y or N

2) Unbroken on Outer Package Y or N

3) Present on Sample Y or N

4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. \_\_\_\_\_ °C

Relinquished by	Received by	Date	Time
FedEx	SPerry	12/15/03	0950

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

 Discrepancies Between Samples Labels and COC Record? Y or N  
 NOTES:

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1	
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <b>MO 10-24-03 Recra</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>				Bill of Lading/Air Bill No. <b>SEE OSPC</b>			
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C			
				Type of Container	aG	aG			
				No. of Container(s)	1	1			
				Volume	60mL	60mL			
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RY5	SOIL	12-5-3	15:00	✓	—			TIE TO	B17RY6
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>	
<b>Relinquished By/Removed From</b>		<b>12-5-3</b>		<b>MO-026 Fridge #1</b>		<b>12-5-3 16:00</b>			
<b>MO-026 Fridge #1</b>		<b>12/8/03 1230</b>		<b>Greg Thomas &amp; Greg Thomas</b>		<b>12/8/03</b>			
<b>Relinquished By/Removed From</b>		<b>12/8/03</b>		<b>David St John</b>		<b>12/8/03 1245</b>			
<b>Relinquished By/Removed From</b>		<b>12-12-03</b>		<b>FED EX</b>					
<b>Relinquished By/Removed From</b>		<b>12/15/03 0950</b>		<b>SPERRY</b>					
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>		Matrix * S=Soil SE=Scumment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1												
Collector <u>DOE/PROB/HUGHES</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>														
Ice Chest No. <u>ERC 02 - 501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS														
Shipped To <u>MD 10-29-03 Recra</u> EBERLINE SERVICES (formerly TMA)		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>SGE 087C</u>																
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None														
				Type of Container	G	G/P														
				No. of Container(s)	1	1														
				Volume	250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.															
Sample No.	Matrix *	Sample Date	Sample Time																	
B17RT3	SOIL	12-6-3	15:45	-																
B17RT6	SOIL	12-6-3	15:45	-																
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By/Removed From <u>Kevin H. Hughes</u> Date/Time <u>12/6/03 1800</u>				Received By/Stored In <u>MO 026 Fridge #2</u> Date/Time <u>12/6/03 1800</u>				The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec, Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232), Tritium-H3, Carbon-14, Strontium-89, 90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # <u>11E</u> on <u>12/12/03</u>  <u>RP 12/2/3</u>						S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From <u>MO 026 Fridge #2</u> Date/Time <u>12/8/03 1230</u>				Received By/Stored In <u>Greg Thomas</u> Date/Time <u>12/8/03</u>																
Relinquished By/Removed From <u>Greg Thomas</u> Date/Time <u>12/8/03 1245</u>				Received By/Stored In <u>David S. J. J. ERC</u> Date/Time <u>12/08/03 1245</u>																
Relinquished By/Removed From <u>SGALE/M. J. J.</u> Date/Time <u>12/12/03 1000</u>				Received By/Stored In <u>FGD EX</u> Date/Time																
Relinquished By/Removed From <u>FedEx</u> Date/Time <u>12/15/03 0950</u>				Received By/Stored In <u>J. J. J.</u> Date/Time																
Relinquished By/Removed From				Received By/Stored In																
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time										

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-025-004		Page 1 of 1	
Collector <b>Dore / Phister / Hughes</b>	Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>		Data Turnaround <b>45 Days</b>		
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>RRC 02501</b>		Field Logbook No. <b>HMF-N-356-1</b>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS					
Shipped To <b>TRD 10-28-03</b> <b>EDERLINE SERVICES (Formerly TMA) Recra</b>		Offsite Property No. <b>A040 059</b>				Bill of Lading/Air Bill No. <b>SEB08PC</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None
				Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P
				No. of Container(s)	3	1	3	1	1	1	1
				Volume	40mL	120mL	40mL	120mL	250mL	500mL	500mL
SAMPLE ANALYSIS				VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time								
B17RT8	SOIL	12-7-3	10:30	✓							
				Personnel not available to relinquish samples from 3728 Ref # <b>1A</b> on <b>12/12/03</b>							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Semi-VOA - 8270A (TCL) (Phenol); Semi-VOA -- 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G</p> <p>(2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Antimony, Beryllium, Bismuth, Copper, Nickel); Mercury - 7471 - (CV)</p> <p>(3) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Ammonia - 350.3; Total Cyanide - 9010; pH (Soil) - 9045</p> <p>(4) <del>Cadmium - 6009; Cobalt - 6009; Copper - 6009; Lead - 6009; Manganese - 6009; Nickel - 6009; Silver - 6009; Vanadium - 6009; Zinc - 6009</del></p> <p><b>RP 12/2/3</b></p>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-005</b>		Page 1 of 1	
Collector <b>Dope / Proter / Hughes</b>		Company Contact <b>TRENT, STEVE</b>		Telephone No. <b>373-5689</b>		Project Coordinator <b>TRENT, SJ</b>		Price Code <b>8N</b>	
Project Designation <b>200-LW-1/LW-2 Characterization - Soil</b>		Sampling Location <b>216-B-58 (27.5 - 30 ft)</b>		SAF No. <b>F03-025</b>		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <b>ERC 02501</b>		Field Logbook No.		COA <b>119143ES10</b>		Method of Shipment <b>FEDERAL EXPRESS</b>			
Shipped To <b>MD 1029-02 Reera</b> <small>BERLINE SERVICES (Formerly TWA)</small>		Offsite Property No. <b>A040 059</b>		Bill of Lading/Air Bill No. <b>SEE O57C</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None		
				Type of Container		G	G/P		
				No. of Container(s)		1	1		
				Volume		250mL	250mL		
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV5	SOIL	12-7-3	14:10	X				TIE TO B17RV7	
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232), Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03  RP 12/2/3	
Kevin Hughes		12-7-3 16:40		MOORE FRIDGE #1		12-7-3/16:40			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
MOORE Ref #1		12/8/03 1230		Greg Thomas		12/8/03 1230			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Greg Thomas		12/8/03 1245		Dennis S. J. BRC		12/8/03 1245			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
SIGNALAD-12-12-03		0930		FED EX					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Red EX		12/15/03 0950		JP					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time	

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-008		Page 1 of 1								
Collector: <i>John P. Potts / Hughes</i>	Company Contact: TRENT, STEVE	Telephone No.: 373-5689	Project Coordinator: TRENT, SJ		Price Code: 8N	Data Turnaround: 45 Days										
Project Designation: 200-LW-1/LW-2 Characterization - Soil	Sampling Location: 216-B-58 (97.5 -100 ft)		SAF No.: F03-025		Air Quality: <input type="checkbox"/>											
Ice Chest No.: <i>ERC 02 501</i>	Field Logbook No.: <i>NLF 3561</i>	COA: 119143ES10	Method of Shipment: FEDERAL EXPRESS													
Shipped To: <i>TMS 10-29-03 Vera</i> EBERLINE SERVICES (Formerly TMA)	Offsite Property No.: <i>A040 059</i>		Bill of Lading/Air Bill No.: <i>SEA 03PC</i>													
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None										
				Type of Container	G	G/P										
				No. of Container(s)	1	1										
				Volume	250mL	250mL										
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RW4	SOIL	12-10-03	1245	X										TIE TO B17RW6		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1</p> <p>(2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228); Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 - Total Sr</p> <p><i>RP 12/2/3</i></p> <p>Personnel not available to Relinquish samples from 3728 Ref # <i>3B</i> on <i>12/12/03</i></p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>				
<i>Thomson</i>		<i>12-10-03 1515</i>		<i>Fridge #1 MO-026 12-10-03 1515</i>												
<i>Fridge #1 MO-026</i>		<i>12-11-03 1000</i>		<i>Thomson</i>												
<i>12-11-03 1010</i>		<i>12-11-03 1010</i>		<i>REF # 3B 3728</i>												
<i>12-12-03 1100</i>		<i>12-12-03 1100</i>		<i>SCALES</i>												
<i>12-12-03 1100</i>		<i>12-12-03 1100</i>		<i>FED EX</i>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<i>Reddy</i>		<i>12/15/03 0950</i>		<i>HPNY</i>												
LABORATORY SECTION	Received By		Title		Date/Time											
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time											



<b>FLUOR Hanford Inc.</b>		<b>CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F03-025-044</b>		Page 1 of 1	
Collector <b>Jade / Pisto / Hughes</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>		Data Turnaround <b>45 Days</b>	
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No. <b>HNF-12-356-1</b>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <b>MSIO-24-03 Recra</b> EDERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040059</b>		Bill of Lading/Air Bill No. <b>500 03 PC</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<b>THE TO B17RV1</b>
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Thorium (Thorium-232), Tritium-3; Carbon-14; Strontium-89,90 -- Total Sr  <b>RP 12/2/3</b>	
<b>Relinquished By/Removed From</b>		<b>Date/Time</b>		<b>Received By/Stored In</b>		<b>Date/Time</b>			
<b>Site Trailer RMA Fringe 12-7-3</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-7-3</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/15/03	
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>		<b>Site Trailer RMA Fringe 12-9-03</b>		<b>1230</b>			
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**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** TNU- HANFORD

**Date:** 12-15-03

**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** F03-025

**LvLI Batch #:** 0312L369

**Sample Custodian:** J-Hendy

**NOTE: EXPLAIN ALL DISCREPANCIES**

- |   |   |                             |  |                |
|---|---|-----------------------------|--|----------------|
| 1. Samples Hand Delivered or Shipped  | Carrier                                 | Fed Ex                      | Airbill#   | 7923 8938 8227 |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    | Comments       |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 5. Samples received cooled or ambient?  | Temp                                    | 1.5 °C                      | Cooler #   | ERC-02-501     |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |                |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies |                |



Lionville Laboratory, Inc.  
HBGX ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RY5	001	S	03LE1654	12/05/03	12/19/03	12/31/03
B17RY5	001 MS	S	03LE1654	12/05/03	12/19/03	12/31/03
B17RY5	001 MSD	S	03LE1654	12/05/03	12/19/03	12/31/03

LAB QC:

PBLKTM	MB1	S	03LE1654	N/A	12/19/03	12/31/03
PBLKTM	MB1 BS	S	03LE1654	N/A	12/19/03	12/31/03



## Analytical Report

Client: TNU HANFORD F03-025  
LVL#: 0312L369  
SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00  
Date Received: 12-15-2003


### HERBICIDE

One (1) soil sample was collected on 12-05-2003.

The sample and its associated QC samples were extracted on 12-19-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-31-2003. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LVL's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Eleven (11) of sixteen (16) matrix spike recoveries were outside acceptance criteria; however, all blank spike recoveries were within criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. Confirmation was not required because target compounds were not detected in the sample.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

  
Date

son:\r\group\data\herb\tnu\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0460023

Initiator: DRYCHIAK  
Date: 1/15/04  
Client: TNU

Batch: 0312L368,369,424  
Samples: MS/MSD'S  
Method: SW846/MCAWW/CLP/

Parameter: H2O  
Matrix: SOIL  
Prep Batch: 03LE1654, 03LE1678

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other \_\_\_\_\_

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note\*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

c. Problem (Include all relevant specific results; attach data if necessary) most recoveries low in  
368-001 MS/MSD - associated BS met criteria all targets (03LE1654)  
369-001 MS/MSD - low recoveries associated BS (03LE1654) acceptable  
424-001 MS/MSD - several low recoveries associated BS (03LE1678)  
all target recoveries met criteria  
Narrate

## 2. Known or Probable Causes(s) MATRIX

## 3. Discussion and Proposed Action

Other Description: \_\_\_\_\_

☐ Re-log  
☐ Entire Batch  
☐ Following Samples: \_\_\_\_\_  
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to \_\_\_\_\_  
☐ Place On/Take Off Hold (circle)

Narrate

## 4. Project Manager Instructions...signature/date: [Signature] 1/15/04

☒ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☐ Include in Case Narrative  
☐ Client Contacted:  
Date/Person \_\_\_\_\_  
☐ Add  
☐ Cancel

## 5. Final Action...signature/date: DRYCHIAK 1/15/04

Other Explanation: \_\_\_\_\_

☐ Verified re-[log][leach][extract][digest][analysis] (circle)  
☒ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

### Route Distribution of Completed SDR

☐ ☒ Initiator  
☐ ☒ Lab General Manager: M. Taylor  
☒ ☒ Project Mgr. Stone/Johnson/Haslett  
☐ ☒ Technical Mgr. Wesson/Daniels  
☐ ☒ QA (file): Alberts  
☐ Data Management: Feldman  
☐ Sample Prep: Beegle/Kiger

### Route Distribution of Completed SDR

☐ Metals: Beegle  
☐ Inorganic: Perrone  
2 ☒ GC/LO: Kiger  
☐ MS: Rychlak/Layman  
☐ Log-in: Melnic  
☐ Admin: Soos  
☐ Other: \_\_\_\_\_



## GLOSSARY OF HERBICIDE DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF HERBICIDE DATA

- P** = This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by HPLC.

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 01/15/04 10:42

RFW Batch Number: 0312L369

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

	Cust ID:	B17RY5	B17RY5	B17RY5	PBLKTM	PBLKTM BS
Sample	RFW#:	001	001 MS	001 MSD	03LE1654-MB1	03LE1654-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate:	DCAA	47 %	33 %	47 %	61 %	112 %
		=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====
Dalapon		170 U	34 * %	44 * %	170 U	92 %
Dicamba		69 U	27 * %	38 * %	67 U	116 %
Dichloroprop		170 U	33 * %	47 * %	170 U	111 %
2,4-D		35 U	30 * %	45 %	33 U	120 %
2,4,5-TP (Silvex)		17 U	47 %	55 %	17 U	110 %
2,4,5-T		17 U	33 * %	48 * %	17 U	122 %
2,4-DB		170 U	31 * %	52 * %	170 U	134 %
Dinoseb		17 U	52 %	56 %	17 U	88 %

*2/2/15/04*

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC



ABC D E F G H I J K L M

<p>Special Instructions: <b>SAF # F03-025</b>  <b>Run Matrix Qc</b></p> <p>Met ①: ACRA + Sb, Be, Bi, Cu, Ni          Ic ①: Cl, F, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub></p>	<p>DATE/REVISIONS:          (7-19-03) 1. <b>Add 08015 to -004</b></p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p>	<p style="text-align: center;"><b>Lionville Laboratory Use Only</b></p> <p>Samples were: _____          1) Shipped _____ or _____          Hand Delivered _____          Airbill # _____</p> <p>2) Ambient or Chilled _____          3) Received in Good Condition Y or N _____          4) Samples Properly Preserved Y or N _____</p> <p>5) Received Within Holding Times Y or N _____</p> <p>Tamper Resistant Seal was:          1) Present on Outer Package Y or N _____          2) Unbroken on Outer Package Y or N _____          3) Present on Sample Y or N _____          4) Unbroken on Sample Y or N _____          COC Record Present Upon Sample Rec't. Y or N _____          Cooler Temp. _____ °C</p>
--	---	---

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FedEx	JPerny	12/15/03	0950	"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N \_\_\_\_\_

NOTES: \_\_\_\_\_

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-001		Page 1 of 1								
Collector <b>POPE / PFISTER / HUGHES</b>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>								
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (0.5 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>										
Ice Chest No. <b>ERC 02 501</b>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS										
Shipped To <b>MO 10-24-03 Recra</b> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>A040 059</b>				Bill of Lading/Air Bill No. <b>SEE OSLC</b>										
POSSIBLE SAMPLE HAZARDS/REMARKS   Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C										
				Type of Container	aG	aG										
				No. of Container(s)	1	1										
				Volume	60mL	60mL										
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151											
Sample No.	Matrix *	Sample Date	Sample Time													
B17RY5	SOIL	12-5-3	15:00	✓	—							TIE TO	B17RY6			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to Relinquish samples from 3728 Ref #1A on 12/12/03				S=Soil SE=Sediment SO=Solid SL=Sediment W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
<i>Kevin D. Hughes</i>		12-5-3 16:00		MO-026 Fridge #1		12-5-3 16:00										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
MO-026 Fridge #1		12/8/03 1230		Greg Thomas		12/8/03										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Greg Thomas		12/8/03 1245		David S. Johnson		12/8/03 1245										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
S. J. A. (EPA) 12-12-03		12-12-03		FED EX												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
FED EX		12/15/03 0950		SPERRY												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-003		Page 1 of 1													
Collector <i>TPD/Photo/Hughes</i>	Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days												
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (17.5 - 20 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <i>ERC 02-501</i>		Field Logbook No.		COA 119143ESI0		Method of Shipment FEDERAL EXPRESS															
Shipped To <i>TPD 10-29-03, Recra</i> EBERLINE SERVICES (formerly TMA)		Offsite Property No. <i>A040059</i>		Bill of Lading/Air Bill No. <i>SEE OSLC</i>																	
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None															
				Type of Container	G	G/P.															
				No. of Container(s)	1	1															
				Volume	250mL	250mL															
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.																
Sample No.	Matrix *	Sample Date	Sample Time																		
B17RT3	SOIL	<i>12-6-3</i>	<i>15:45</i>	<i>-</i>														<i>TLE TO B17RT5</i>			
B17RT6	SOIL	<i>12-6-3</i>	<i>15:45</i>	<i>-</i>														<i>TLE TO B17RT5</i>			
CHAIN OF POSSESSION				Sign/Print Names				<b>SPECIAL INSTRUCTIONS</b> The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63, Gamma Spec - Radium-226, Radium-228, Technetium-99, Isotopic Thorium (Thorium-232), Tritium - H3, Carbon-14, Strontium-89, 90 -- Total Sr  <i>RP 12/2/3</i>  Personnel not available to Relinquish samples from 3728 Ref # <i>1A</i> on <i>12/12/03</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Kevin N. [Signature]</i>		<i>12-6-3 1800</i>		<i>MO 026 Fridge #2</i>		<i>12-6-3 1800</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>MO 026 Fridge #2</i>		<i>12/8/03 1230</i>		<i>Greg Thomas</i>		<i>12/8/03</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<b>MATRIX *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>Greg Thomas</i>		<i>12/8/03 1245</i>		<i>David St. [Signature]</i>		<i>12/08/03 1245</i>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>SJGALE [Signature]</i>		<i>12/12/03 1000</i>		<i>FED EX</i>																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<b>LABORATORY SECTION</b> Received By _____ Title _____ Date/Time _____  <b>FINAL SAMPLE DISPOSITION</b> Disposal Method _____ Disposed By _____ Date/Time _____													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<i>FED EX</i>		<i>12/15/03 0950</i>		<i>[Signature]</i>																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															

A-6003-618(03/03)

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-005		Page 1 of 1													
Collector: <u>Dope / Proke / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days													
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>															
Ice Chest No. <u>ERC 02501</u>		Field Logbook No.		COA 119143ES10		Method of Shipment FEDERAL EXPRESS															
Shipped To <u>ms 1029-02 Reera</u> BERLINE SERVICES (Formerly TWA)		Offsite Property No. <u>A040 059</u>		Bill of Lading/Air Bill No. <u>SEE OFP C</u>																	
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation		Cool 4C	None														
				Type of Container		G	G/P														
				No. of Container(s)		1	1														
				Volume		250mL	250mL														
SAMPLE ANALYSIS				See item (1) in Special Instructions.		See item (2) in Special Instructions.															
Sample No.		Matrix *		Sample Date		Sample Time															
B17RV5		SOIL		12-7-3		14:10		TIE TO B17RV7													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.  (1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99; Isotopic Thorium (Thorium-232); Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr  Personnel not available to Relinquish samples from 3728 Ref # 1A on 12/12/03						S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other							
<u>Karin Dugan</u>		<u>12/7/3</u>		<u>ms 026 fridge #1</u>		<u>12-7-3/16:40</u>															
<u>Moazz Ref #1</u>		<u>12/8/03</u>		<u>Greg Thomas</u>		<u>12/8/03</u>															
<u>Greg Thomas</u>		<u>12/8/03</u>		<u>Greg Thomas</u>		<u>12/8/03</u>															
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>															
<u>SIGLEAD-12-12-03</u>		<u>0930</u>		<u>FED EX</u>		<u></u>															
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>															
<u>Pedex</u>		<u>12/15/03 0950</u>		<u>JPerry</u>		<u></u>															
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>															
<u></u>		<u></u>		<u></u>		<u></u>															
LABORATORY SECTION		Received By		Title				Date/Time													
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time													

FLUOR Hanford Inc.						CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								F03-025-008		Page 1 of 1															
Collector: <u>Dave Pfrans / Hughes</u>						Company Contact TRENT, STEVE				Telephone No. 373-5689				Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days													
Project Designation 200-LW-1/LW-2 Characterization - Soil						Sampling Location 216-B-58 (97.5 -100 ft)				SAF No. F03-025		Air Quality <input type="checkbox"/>																			
Ice Chest No. <u>ERC 02 501</u>						Field Logbook No. <u>NLF 3561</u>				COA 119143ES10		Method of Shipment FEDERAL EXPRESS																			
Shipped To <u>TMS 10-29-03 Pera</u> EBERLINE SERVICES (Formerly TMA)						Offsite Property No. <u>A040 05T</u>				Bill of Lading/Air Bill No. <u>SEE 03PC</u>																					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage						Preservation		Cool 4C	None																						
						Type of Container		G	G/P																						
						No. of Container(s)		1	1																						
						Volume		250mL	250mL																						
SAMPLE ANALYSIS						See item (1) in Special Instructions.		See item (2) in Special Instructions.																							
Sample No.		Matrix *		Sample Date		Sample Time																									
B17RW4		SOIL		12-10-03		1245		X									TIE TO B17RW6														
CHAIN OF POSSESSION						Sign/Print Names						SPECIAL INSTRUCTIONS						Matrix *													
Relinquished By/Removed From <u>M. Anderson</u>						Date/Time <u>12-10-03 1515</u>						Received By/Stored In <u>Fridge #1 MO-026</u>						Date/Time <u>12-10-03 1515</u>						(1) Chromium Hex - 7196; NO <sub>2</sub> /NO <sub>3</sub> - 353.2; Sulfides - 9030; Oil & Grease - 413.1 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228), Technetium-99, Isotopic Thorium (Thorium-232); Tritium - H <sub>3</sub> ; Carbon-14; Strontium-89,90 Total Sr  Personnel not available to Relinquish samples from 3728 Ref # <u>38</u> on <u>12/12/03</u>						S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <u>Kidde #1 MO-026</u>						Date/Time <u>12-11-03 1000</u>						Received By/Stored In <u>M. Anderson</u>						Date/Time <u>12-11-03 1000</u>													
Relinquished By/Removed From <u>M. Anderson</u>						Date/Time <u>12-11-03 1010</u>						Received By/Stored In <u>Ref # 38 3728</u>						Date/Time <u>12-11-03 1010</u>													
Relinquished By/Removed From <u>REF 38 3728</u>						Date/Time <u>12-12-03 1100</u>						Received By/Stored In <u>S. J. Smith</u>						Date/Time <u>12-12-03 1100</u>													
Relinquished By/Removed From <u>SJGAL/Adh</u>						Date/Time <u>12-12-03 1100</u>						Received By/Stored In <u>FED EX</u>						Date/Time <u>12-12-03 0950</u>													
Relinquished By/Removed From <u>FedEx</u>						Date/Time <u>12/15/03 0950</u>						Received By/Stored In <u>J Perry</u>						Date/Time <u>12/15/03 0950</u>													
LABORATORY SECTION		Received By				Title				Disposed By				Date/Time																	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time																					

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-025-044		Page 1 of 1	
Collector <u>Jode / Pisto / Hughes</u>		Company Contact TRENT, STEVE		Telephone No. 373-5689		Project Coordinator TRENT, SJ		Price Code <b>8N</b> Data Turnaround <b>45 Days</b>	
Project Designation 200-LW-1/LW-2 Characterization - Soil		Sampling Location 216-B-58 (22.5 - 25 ft)		SAF No. F03-025		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 02501</u>		Field Logbook No. <u>HNF-D-356-1</u>		COA 119143ES10		Method of Shipment FEDERAL EXPRESS			
Shipped To <u>MDIO-24-03 Recra</u> <u>EDERLINE SERVICES (Formerly TMA)</u>		Offsite Property No. <u>A040059</u>		Bill of Lading/Air Bill No. <u>500 037C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	Cool 4C	None			
				Type of Container	G	G/P			
				No. of Container(s)	1	1			
				Volume	250mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.				
				<u>RP 12/2/3</u>					
Sample No.	Matrix *	Sample Date	Sample Time						
B17RV2	SOIL	12-7-3	10:30	X					<u>TRF TO B17RV1</u>
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis. See SAF COC Comments for holding time issues.</p> <p>(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil &amp; Grease - 413.1  (2) Nickel-63; Gamma Spec - Radium [Radium-226, Radium-228], Technetium-99; Isotopic Thorium [Thorium-232], Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr</p> <p><u>RP 12/2/3</u></p> <p>Personnel not available to Relinquish samples from 3728  Ref # <u>1A</u> on <u>12/12/03</u></p>	
<u>Kevin D. Hughes</u>		<u>12-7-03 16:00</u>		<u>Site trailer RMA Frigate</u>		<u>12-7-3 1600</u>			
<u>Site Trailer RMA Frigate</u>		<u>12-9-03 1230</u>		<u>Tim Schurman / Tim Schurman</u>		<u>12-9-03 1230</u>			
<u>Tim Schurman</u>		<u>12-9-03 1430</u>		<u>Ref # 2</u>		<u>12-9-03 1430</u>			
<u>Ref # 2</u>		<u>12-11-03 1000</u>		<u>Tim Schurman</u>		<u>12-11-03 1000</u>			
<u>Ref # 1A</u>		<u>12-11-03 1010</u>		<u>Ref # 1A</u>		<u>12-11-03 1010</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>Ref # 1A</u>		<u>12-12-03 1100</u>		<u>Ref # 1A</u>		<u>12-12-03 1100</u>			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

**CLIENT:** *TNU- HANFORD*

**Date:** *12-15-03*

**Purchase Order / Project# /**  
**SAF# / SOW# / Release #:** *F03-025*

**LvLI Batch #:** *0312L369*

**Sample Custodian:** *V-Hendy*

**NOTE: EXPLAIN ALL DISCREPANCIES**

1. Samples Hand Delivered or Shipped

Carrier *Fed E*

Airbill# *7923 8938 8227*

2. Custody seals on coolers or shipping container intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

Comments

3. Outside of coolers or shipping containers are free from damage?

☒ Yes

☐ No

4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?

☒ Yes

☐ No

5. Samples received cooled or ambient?

Temp *1.5* °C

Cooler # *ERC-02-501*

6. Custody seals on sample containers intact, signed and dated?

☒ Yes

☐ No

☐ No Seals

7. coc signed and dated?

☒ Yes

☐ No

8. Sample containers are intact?

☒ Yes

☐ No

9. All samples on coc received? All samples received on coc?

☒ Yes

☐ No

10. All sample label information matches coc?

☒ Yes

☐ No

11. Samples properly preserved?

☒ Yes

☐ No

12. Samples received within hold times? Short holds taken to wet lab?

☒ Yes

☐ No

13. VOA, TOC, TOX free of headspace?

☐ Yes

☐ No

☒ N/A

14. QC stickers placed on bottles designated by client?

☐ Yes

☐ No

☒ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

☒ Yes

☐ No

16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

☐ Yes

☐ No

☒ No Discrepancies

*af*